

# FLIGHT

First Aero Weekly in the World.

Founder and Editor : STANLEY SPOONER.

A Journal devoted to the Interests, Practice and Progress of Aerial Locomotion and Transport.

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## Flight.

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### TO OUR READERS.

#### The Supply of "FLIGHT." Important Notice.

Order "FLIGHT" to be either delivered or reserved for you regularly.

As the demand for "FLIGHT" is so great each week, it is of the utmost importance that readers should place their orders *firmly* for copies of "FLIGHT" at the bookstalls, their newsagents, or direct from the publishers, at 44, St. Martin's Lane, W.C., if they wish to secure a copy every week and avoid disappointment. The stringent Government restrictions in regard to the supply of printing paper necessitates this precaution in order that only actual numbers required are printed, and all wastage by unsold copies may thereby be reduced to a minimum, if not eliminated.

THE PUBLISHERS.

### EDITORIAL COMMENT.

**M**OST assuredly the Zeppelin fleet of 13—ominous number—on Saturday-Sunday night, meant serious business against the hated England. But it was the dog that died, and once again, this time in the sphere of the air, the German has to learn his lesson, that so long as his demoniacal ingenuity devises infernal war methods, so will the British quickly find their antidotes and ultimately

turn upon the uncivilised barbarian the same weapons, in an intensified form, by which it has been sought to inflict woe upon us. With one major vessel with its very valuable crew completely annihilated, one more in all probability lost on the homeward journey, and a third badly lamed, the German Higher Command can scarcely honestly cry quits, as against the damage, material and otherwise, which he managed to inflict by means of his entire air-fleet of thirteen. In fact, in spite of all the wonderful fables of the total destruction of the great "fortress of London," the harbours of Harwich, Dover and a few other places they would like to wipe out, besides a few dozen Dreadnoughts, battle-cruisers, &c., which will be issued in due course by the Woolf Bureau to soothe the German public, we fancy the Hun Chancellor of the War Exchequer, or whatever forty-syllable designation may attach in German to that very much worried functionary just now, will find it a pretty tough job to pull his new war loan through, so that there will be much tangible security with which to carry on the financial juggle still a stage further. There is also a further incentive for these attacks to take place now with greater vigour than ever. Hindenburg is a supporter of frightfulness in its most drastic form, and there are indications that before long the German lines may have to be materially shortened in the West, when the military situation would be very greatly altered and the further persistence with these raids upon England would be rendered thereby increasingly difficult of accomplishment with anything like safety. We may, therefore, expect further attempts to break through our cordon of defences in the near future, when fair Luna is once again on the

#### The Zeppelin Retribution.

wane and the elements are favourable. That these attacks will become upon every visit more and more hazardous for the invader is certain, and with the taste of "Surprise Packet No. 1" in the mouths of those companion airship crews which got safely away, the chances are that, the next visitation will be even more circumspect than those which we have experienced in the past. In the meantime the well regulated "darkening" of the Metropolis, away to its utmost suburban outer ring, has completely baffled these night hawks, and the Home Defence Authorities are to be congratulated upon their methods in insisting upon the strictest observance of these. Transgressors—fool or the reverse—are being brought to book with promptness and despatch, as they say in business circulars, and obstinate conscientious objectors, in this connection, should receive a more drastic reminder of their duties to their fellow citizens, if they should persist in their obstinacy of holding up the regulations.

As an outcome of the Surprise No. 1 medicine administered by Lieut. Wm. Leefe Robinson, Worcester Regiment, R.F.C., we are glad to welcome the award of the V.C. to this exceedingly gallant officer. Not only did he finish off the pirate craft by deliberate tactics, after having been in the air for over two hours, but he had previously during his flight attacked and helped to drive off another airship. Our sincere congratulations to Lieut. Robinson, V.C., upon his well-merited honour. The problem which has now to be elucidated is as to the identity of the fire-consumed vessel.

## Zeppelin or Schütte- Lanz.

Without a careful and collated examination of such constructional parts of the airship brought down at Cuffley as had survived the effects of the intense heat of the burning gases, and of the final impact when she struck the ground, it is very difficult to arrive at absolute facts concerning what type of airship it was that came to such a dramatic end on the morning of Sunday last. From the material available, however, much of which is of a contradictory nature, it is possible to make certain deductions, which, without claiming to be exact facts, will probably not be very far wrong.

One of the first peculiarities that impress themselves upon the mind after an examination of the wreckage is the marked scarcity of metal framework and the profusion of wire bracing. This fact can only point to one thing—wood was freely employed in the construction, and rigidity was obtained by means of the wire bracing, much after the fashion of aeroplane construction. As this form of construction was typical of the Schütte-Lanz airships, the theory has been advanced that possibly the craft brought down was of that type. Early in the war, it may be remembered, there were at least two airships built by this firm which figured in reports. One was the S.L. II, which had a length of 470 ft., a diameter of 60 ft., and a cubic capacity of 780,000 cu. ft. She was fitted with four Maybach engines of 180 h.p. each. This ship was severely damaged by the Russians on August 28th, 1914, but the Germans claimed to have successfully repaired her.

The next Schütte-Lanz to be heard of was S.L. III,

which was constructed for the German Navy and bore the naval number L4. This airship had a length of 540 ft., a diameter of 60 ft., and a capacity of 1,065,000 cu. ft. Little was heard of the S.L. III or L4, until she was wrecked off the west coast of Denmark in February, 1915. The engines with which this ship was equipped were four Mercedes motors of 240 h.p. each.

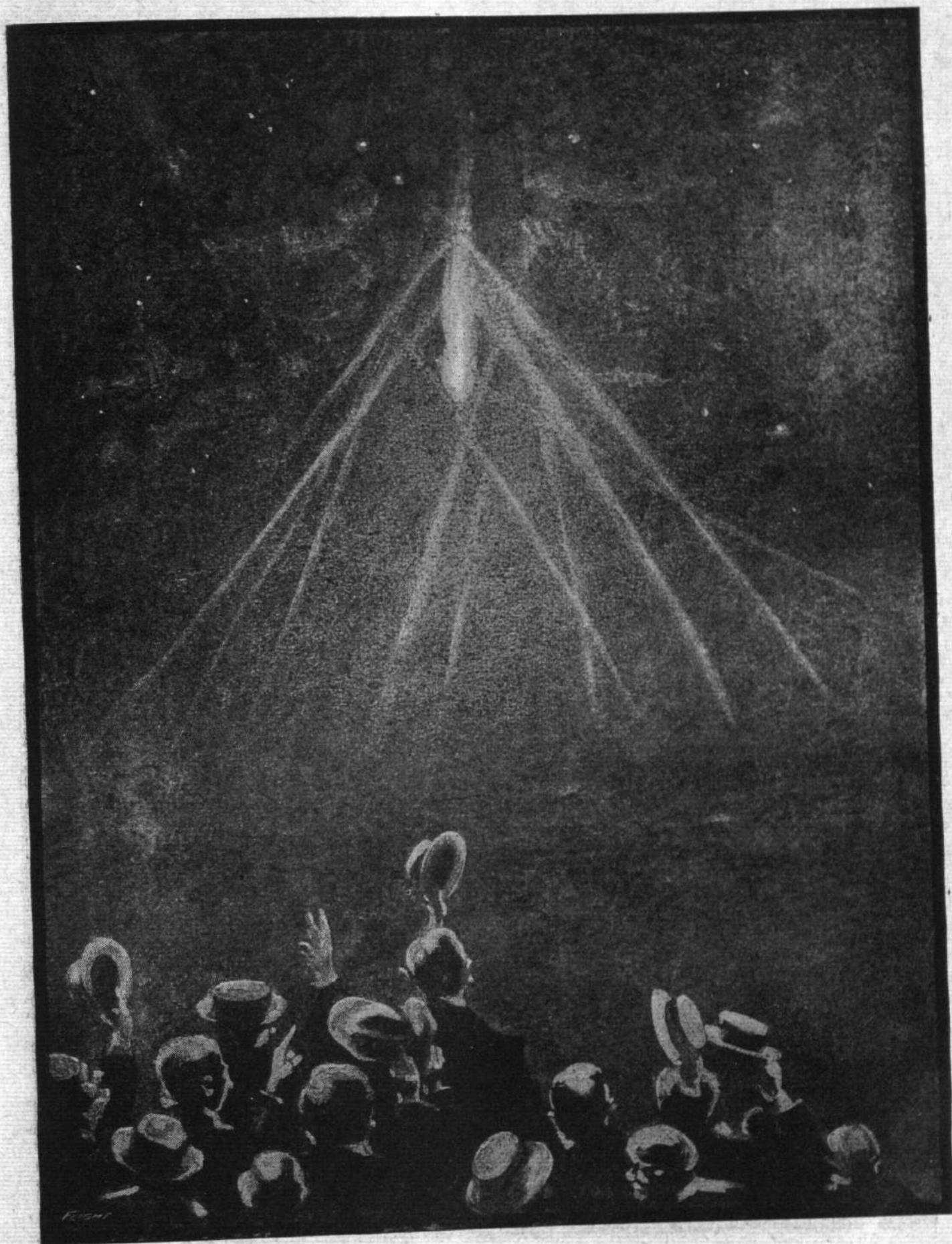
Early in the war, it may be remembered, it was rumoured that no more Schütte-Lanz airships were to be built, and that, as a matter of fact, this firm was building Zeppelins under licence. Whether there was any truth in this rumour, and if so whether this decision on the part of the German authorities was due to actual defects in the S.L. form of construction or to the influence of the financial backers of Count Zeppelin, it is impossible to say. At any rate, if the Cuffley airship was indeed a Schütte-Lanz, she could scarcely have been an old one, as the ships built by this firm up to the beginning of the war have been accounted for with the exception of S.L. II, which would hardly be suitable for long-distance cruises two years after being badly damaged. As far as we can gather, the four engines taken out of the wreck were not Mercedes engines, those who have inspected them being most emphatic on the point that there was no overhead valve gear as in the case of the Mercedes. The engines, we are told, had six cylinders, were of the vertical type, and were painted black, with the exception of a "bright plate" on the top of each cylinder.

This description, vague as it is, appears to tally with the appearance of the 180 h.p. Maybach engines, so that it is reasonable to assume that the airship was fitted with four six-cylinder Maybach engines of 180 h.p. each. As the latest Schütte-Lanz of which we have any definite knowledge, the L4, had four Mercedes engines of 240 h.p. each, it would appear probable that if the S.L. firm were still building for the German Navy they would be building large airships with powerful motors, and that therefore these craft would still be equipped with Mercedes engines.

Another fact which rather tends to strengthen the theory that the airship was not a Schütte-Lanz is that the Zeppelin firm have always favoured the Maybach engines. The probabilities would, therefore, seem to be that the airship was a Zeppelin, and it now remains to determine whether she was of the old type or one of the later models. Although eye-witnesses do not agree on the point of whether she was straight-sided or of stream-line form, some being of the opinion that she was one shape, others maintaining that she was the other, it is more than probable, in view of the fact that wood was so extensively employed in her construction, that she was of the modern, or stream-line, form. In the first place, the metal framework construction was so typical of the earlier straight-sided Zeppelins, that it does not seem probable that when going to such radical alterations as to substitute wood for metal in the main construction the older and aerodynamically inefficient form would be retained, especially as the wood can be employed with greater advantage in the curved than in the straight-beam form.

Everything, therefore, appears to point to the





THE ZEPP. HOLOCAUST.—The final stage of the doomed airship, as seen from Hampstead Heath.

probability that in the modern Zeppelins some of the constructional features of the Schütte-Lanz have been incorporated, when the necessity for speed rendered a stream-line form of hull advisable. In the official report of the bringing down of the airship it was stated that the employment of wood might indicate a scarcity of aluminium in Germany. With this we can hardly agree, in view of the fact that Germany has inside her boundaries vast resources of the aluminium ore from which the metal is produced. The duralumin used in the construction of the German airships does not, of course, consist of pure aluminium, but is an alloy of which the chief constituent in addition to the aluminium is magnesium, which forms the hardening agent. Also of this there is every reason to suppose that Germany possesses ample raw material. The

reasons for substituting wood for the duralumin are, therefore, hardly to be sought for in any scarcity of raw material for the manufacture of the metal, but must be attributed to advantages which the wood has been found to possess for construction of stream-line structures.

One of the chief troubles experienced with the duralumin construction was, we believe, that the rivets joining the various component parts of the framework were in the habit of shearing under the effects of the vibration from the engines and other stresses to which such a large structure is subjected.

This departure in constructional methods might be kept in mind by our own designers; and the lesson thus learned taken advantage of when building rigid airships.

## V.C. for Lieut. W. L. Robinson, R.F.C.

The following appeared in the *London Gazette* of the 5th inst. :—

"H.M. the King has been graciously pleased to award the V.C. to the under-mentioned officer :—

"Lieut. Wm. Leefe Robinson (Worcester Regt. and R.F.C.). For most conspicuous bravery.

"He attacked an enemy airship under circumstances of great difficulty and danger, and sent it crashing to the ground as a flaming wreck.

"He had been in the air for more than two hours, and had previously attacked another airship during his flight."

Born at Tellidetta, South Coorg, South India, Lieut. William Leefe Robinson was 21 on July 14th last. He is a son of Mr. Horace Robinson and a grandson of Mr. W. C. Robinson, R.N., Chief Naval Constructor at Portsmouth

Dockyard. He came to England when six months old and returned to India when he was seven. At fourteen he came back again, and went to St. Bee's School, Cumberland. After travelling in France for some time, he entered Sandhurst in August, 1914, and on December 16th of that year was gazetted to the Worcestershire Regiment. Later he joined the Royal Flying Corps, and was in France as an observer from February last until on May 9th he was wounded in the right arm by shrapnel whilst flying over Lille. He came back to England, and, after convalescence, began training as a pilot, taking his certificate on July 28th, 1915. Subsequently he was trained as a night pilot, and was up on all the raids near London for the last seven months. Lieut. Robinson's only surviving brother is at present in Mesopotamia.

[Just as "FLIGHT" is on the Press it is announced that the airship brought down was "L. 21."]



THE ZEPP. HOLOCAUST.—R.F.C. men collecting the wire—some wire—of the destroyed airship at Cuffley. On the left is a motor lorry with a load of other "relics" of the monster dirigible, and beyond the lorry is seen the little chapel where the mortal remains of the airship's crew found temporary sanctuary.



# The British Air Service

"PER ARDUA AD ASTRA"

Under this heading are published each week the official announcements of appointments and promotions affecting the Royal Naval Air Service and the Royal Flying Corps (Military Wing) and Central Flying School. These notices are not duplicated. By way of instance, when an appointment to the Royal Naval Air Service is announced by the Admiralty it is published forthwith, but subsequently, when it appears in the LONDON GAZETTE, it is not repeated in this column.

## Royal Naval Air Service.

THE following appeared among the Admiralty announcements of August 30th:—

Probationary Flight Sub-Lieutenant (Temporary).—M. C. Redford granted a temporary commission as Sub-Lieutenant (R.N.V.R.), seniority Aug. 29th, and appointed to "President," additional, for R.N.A.S. (appointment as Probationary Flight Sub-Lieutenant terminated); Aug. 28th.

The following appeared among the Admiralty announcements of September 1st:—

The under-mentioned have been entered as Probationary Flight Sub-Lieutenants for temporary service, and appointed to the "President," additional, for R.N.A.S., all to date Sept. 3rd: H. E. Hyde, D. H. F. McMaster, V. F. A. Galwayne, L. E. Adlam, J. W. McCann, C. F. D. Ash, E. G. Harwood and J. H. Thompson.

The following appeared among the Admiralty announcements of September 2nd:—

W. Allaway entered as Probationary Flight Sub-Lieutenant for temporary service, and appointed to "President," additional for R.N.A.S., to date Sept. 10th.

## Royal Flying Corps (Military Wing).

THE following appeared in the London Gazette of August 29th:—

Equipment Officer.—Second Lieut. W. W. Hart, and to be Temporary Captain whilst so employed; June 21st, 1916.

Suptg. Clerk David McBirney, from R.A., to be Qr.-Mr. with the hon. rank of Lieutenant; June 15th, 1916.

Memoranda.—To be Temporary Second Lieutenants for duty with R.F.C.:—July 31st, 1916: 1st Class Air-Mechanic W. H. Gouldstone, from R.N.A.S.; Petty Officer W. H. Rose, from R.N.A.S. Sergt. P. P. Capelli, from A.S.C.; Aug. 2nd, 1916. Pte. R. Richards, from Princess Patricia's Canadian L.I.; Aug. 12th, 1916. Aug. 16th, 1916: Pte. N. D. Robinson, from Inns of Court O.T.C.; Gunner E. D. Warburton, from New Zealand Force; Sergt. A. S. Talbot, from Australian Imperial Force; Pte. C. Russell Bray, from Australian Imperial Force. Sergt. G. M. Eiloart, from Harrow Sch. O.T.C.; Aug. 17th, 1916. Pte. C. T. Warman, from A.S.C.; Aug. 18th, 1916.

To be Temporary Second Lieutenants (on probation), for duty with R.F.C.:—Aug. 5th, 1916: C. M. Bailey, D. C. Beadell, J. W. Cairns, E. H. Comber-Taylor, W. O. Cornish, F. J. Cowlshaw, D. Dalgleish, R. N. Dobbryn, J. FitzHugh, V. J. Hammon, G. A. D. Hancock, J. S. Harrison, M. Liggett, O. W. A. Manning, G. H. Martingell, A. W. Mason, H. Morris, S. Orchard, R. A. Phipps, H. H. T. Potter, G. J. E. Smith, W. A. Southey, A. Watson, G. T. Wix, G. R. Dawbarn, P. A. de Escofet, L. I. Eskell, B. B. Henry, J. Lawson, L. H. Leckie, L. G. Lovell, W. A. McClatchie, M. A. Kay, A. Pascoe, E. L. Prichard-Evans, H. Smither, G. O. Venn, D. P. Walter, V. W. Allen, R. Hopper, V. Phillips, G. D. Smith, F. A. Taylor, H. J. Ball, T. H. French, G. W. Shuter, A. D. Taylor, M. Topham, R. Anderson, W. J. G. Armiger, H. Blythe, T. E. Pennington, R. F. Barnes, A. Bell-Irving, M. B. Cole, J. H. Dale, J. W. Eyton-Lloyd, C. J. Howson, H. F. Lindo, M. A. McKenzie, R. B. Sisson, H. Cresswell, A. G. Cribb, M. L. J. Daly, J. Harper, J. L. Hill, E. S. Moore, W. C. Bagnall, R. M. Burnand, E. T. Carpenter, G. Cowpe, W. A. J. Gribble, J. G. Goodyear, W. E. Goodyear, C. Howe, H. A. J. Lucas, C. S. Richmond, M. E. Woods, T. C. Arnot, T. M. Chapman, W. Harris, L. G. Harrison, S. J. Stewart, G. G. Thomson, N. E. Barraclough, F. Berryman, B. G. King, H. P. Rushforth, R. Temple, A. W. Watson, C. J. Agelasto, L. W. Beal, E. C. Black-Roberts, J. R. Cudemore, V. F. S. Dunton, T. Durrant, P. F. Fullard, C. L. Gunnery, E. Hillary, S. C. Lumb, H. E. F. Russell and R. C. Savery.

Supplementary to Regular Corps.—Lieutenants to be Captains: H. Le Jeune and L. T. G. Mansell; July 1st, 1916.

To be Captains:—Aug. 1st, 1916: Lieutenants (Temporary Captains) R. G. Gould, F. Jolly, L. F. R. Fell and A. M. Morison; Lieutenant (Temporary Major) C. Defries; Lieu-

tenants (Temporary Captains) W. D. S. Sanday, A. B. Adams, P. E. L. Gethin and G. H. B. McCall; and Lieut. E. S. Skipper.

The following appeared in a supplement to the London Gazette issued on August 30th:—

Flight-Commander.—Second Lieut. (Temporary Lieut.) G. N. Martin, Durh. L.I., Special Reserve, from a Flying Officer, and to be Temporary Captain whilst so employed; Aug. 13th, 1916.

Equipment Officer.—Temporary Capt. A. H. S. MacCallum, General List; Aug. 8th, 1916.

Flying Officers.—Temporary Second Lieut. J. B. Davies, N. Staff R., and to be transferred to the General List; Aug. 1st, 1916. Aug. 3rd, 1916: Second Lieut. F. E. Hills, R.G.A. (T.F.); Second Lieut. (on probation) L. J. Riordan, R.F.A., Special Reserve. Aug. 4th, 1916: Temporary Second Lieut. (Temporary Lieut.) V. G. A. Bush, General List, from a Flying Officer (Observer). Temporary Second Lieut. W. H. Miles, R.E., and to be transferred to the General List. Second Lieut. V. F. Stewart, Durh. L.I. (T.F.). Temporary Second Lieut. P. R. Mallinson, Bedf. R., and to be transferred to the General List. Second Lieutenants, Special Reserve: D. J. Taylor, J. M. Batting, R. P. C. Freemantle. Aug. 5th, 1916: Lieut. (Temporary Capt.) A. G. H. Carr, York and Lanc. R. (T.F.); Second Lieut. T. Q. Back, R.F.A. (T.F.). Second Lieut. E. L. Ives, W. York. R., Special Reserve, and to be seconded; Aug. 7th, 1916. Aug. 8th, 1916: Lieut. P. M. L. Edmunds, 12th Ldrs., and to be seconded; Second Lieut. (Temporary Lieut.) W. Morrice, Queen's Own R. Glasgow Yeo. (T.F.); Temporary Second Lieut. H. Lambourne, Notts and Derby R., and to be transferred to the General List; Second Lieut. F. W. Morter, R. War. R., Special Reserve, and to be seconded. Second Lieut. (Temporary Lieut.) F. T. Woods, North'n R. (T.F.); Aug. 9th, 1916. Aug. 10th, 1916: Temporary Lieut. R. D. S. Sparkes, Welsh R., and to be transferred to the General List; Temporary Lieut. D. H. Bacon, A.S.C., and to be transferred to the General List; Second Lieut. K. F. Hunt, Sco. Horse Yeo. (T.F.). Second Lieut. J. L. Robertson, York. R. (T.F.); Aug. 11th, 1916.

Flying Officers (Observers).—Aug. 6th, 1916: Capt. H. P. D. Helm, Bord. R., Special Reserve, and to be seconded; Temporary Second Lieut. C. W. T. Riley, General List. Aug. 14th, 1916: Temporary Capt. R. E. Saul, A.S.C., and to be transferred to the General List; Temporary Second Lieut. L. Taylor, General List; Temporary Second Lieut. L. C. Chapman, General List.

Balloon Officers.—Temporary Second Lieut. W. Sutherland, Midd'x R., and to be transferred to the General List; Aug. 5th, 1916. Aug. 6th, 1916: Temporary Second Lieut. G. A. Sinclair-Hill, Midd'x R., and to be transferred to the General List; Temporary Second Lieut. H. E. Ambrose, R. Fus., and to be transferred to the General List; Second Lieut. R. Hofmeyr, Yorks. L.I., and to be seconded; Second Lieut. W. Y. Walls, Arg. and Suth'd Highrs. (T.F.); Temporary Second Lieut. L. A. C. Helbert, General List; Second Lieut. J. A. Cochrane, R. Sc. Fus. (T.F.); Second Lieut. A. M. Pearson, Special Reserve; Temporary Second Lieut. R. D. Bradshaw, General List; Second Lieut. A. W. Crombie, Special Reserve. Temporary Lieut. P. H. Corbett, 9th Ldrs., from 7th Res. Regt. of Cav.; Aug. 10th, 1916.

Assistant Equipment Officers.—July 1st, 1916: Second Lieutenants, Special Reserve: T. G. Leith, R. G. Booth, J. W. G. Mackinlay. Temporary Lieut. B. J. Wolfe-Barry, R.A., and to be transferred to the General List; July 17th, 1916. Aug. 1st, 1916: Second Lieutenants, Special Reserve: A. O. Betts, C. H. Drabble. Aug. 14th, 1916: Second Lieut. N. A. Grandage, R.E. (T.F.), Second Lieut. F. E. Bray, Special Reserve; Temporary Second Lieut. A. W. Smith, General List; Temporary Second Lieut. W. B. South, General List; Temporary Second Lieut. W. Hammond, General List; Second Lieutenants, Special Reserve: R. J. Copley, C. Woodall, G. Craig, J. O. Ruscoe; Temporary Second

Lieut. A. G. T. Applin, General List; Second Lieutenants, Special Reserve: H. Loeffler, W. F. C. Nason, R. E. Reid, J. R. G. Rowden, J. M. Scott, A. T. Shaw, E. F. Sutton, G. F. Wilson and W. B. Brett.

**Memoranda.**—Lieut. A. H. S. MacCallum, from R.N.V.R., to be Temporary Captain for duty with R.F.C.; Aug. 8th, 1916.

To be Temporary Second Lieutenants for duty with R.F.C.: Cadet W. F. Merritt, from Camb. Univ. O.T.C.; Aug. 5th, 1916. L.-Corpl. O. Matson, from Canadian Ex. Force, and Pte. A. W. Erlebach, from Inns of Court O.T.C.; Aug. 14th, 1916. Sergt. M. G. Cole, from Marlborough Coll. O.T.C., and Dvr. D. P. Collis, from Canadian Ex. Force; Aug. 15th, 1916. Pte. J. Ferguson, from Winchester Coll. O.T.C.; Pte. H. C. Bourne, from Australian Imperial Force; and Gunner C. B. King, from Australian Imperial Force; Aug. 16th, 1916. Dvrs. T. H. Lines and E. G. Roberts, from H.A.C. (T.F.); Aug. 18th, 1916.

2nd Class Air-Mechanic H. W. Carter, from R.F.C., to be Temporary Second Lieutenant for duty with the Military Wing of that Corps; Aug. 17th, 1916.

**Supplementary to Regular Corps.**—The appointment as Second Lieutenant of R. Stubbs, notified in the *Gazette* of July 17th, 1916, is cancelled.

Second Lieutenants (on probation) confirmed in their rank: A. O. Betts, R. G. Booth, C. H. Drabble, F. E. Bray, D. J. Taylor, J. W. G. Mackinlay, R. J. Copley, C. Woodall, J. M. Batting, A. W. Crombie, A. M. Pearson, D. H. Glasson, J. Fairbairn, E. J. Henderson, H. J. Gibson, G. F. Wilson, J. M. Scott, J. O. Ruscoe, J. R. G. Rowden, R. E. Reid, E. F. Sutton, W. F. C. Nason, A. Young, A. B. Albert, E. McM. Howes and H. Darnell.

To be Second Lieutenants (on probation): A. S. Cox; Aug. 2nd, 1916. Aug. 3rd, 1916: D. W. Wilson, A. W. Payne. Aug. 5th, 1916: J. N. Stephens, T. G. Mackenzie, L. G. P. Warren. Aug. 11th, 1916: E. L. Pape, C. McM. Russell. Aug. 14th, 1916: D. Alexander, H. E. Duncan. G. F. P. Warren; Aug. 15th, 1916. Aug. 16th, 1916: V. Andrew, A. B. Morgan. Aug. 18th, 1916: H. P. Reid, F. A. Smith. D. L. Daly; Aug. 26th, 1916.

The following appeared in the *London Gazette* issued on September 1st:—

**Flight-Commanders.**—Aug. 8th, 1916: Capt. H. M. Meyler, Bord. R., from a Balloon Officer; Lieut. D. C. L. Speed, K.R.R.C., from a Balloon Officer, and to be Temporary Captain whilst so employed. Second Lieut. (Temporary Lieut.) D. M. Tidmarsh, R. Ir. Regt., Special Reserve, from a Flying Officer, and to be Temporary Captain whilst so employed; Aug. 16th, 1916.

**Flying Officer (Observer).**—Temporary Second Lieut. S. F. P. Polhill, R.E., and to be transferred to General List; Aug. 16th, 1916.

**Memorandum.**—The under-mentioned to be Temporary Second Lieutenant: L.-Corpl. J. L. Dearing, from A. Ord. Corps, for duty with R.F.C.; Aug. 26th, 1916.

The following appeared in a supplement to the *London Gazette* issued on September 2nd:—

The under-mentioned Warrant Officers to be Second Lieutenants for service in the Field:—S. Lan. R.: Sergt.-Major J. Kemper, from R.F.C., and to be seconded for duty with the R.F.C.; Aug. 1st, 1916.

Sea. Highrs.: Sergt.-Major J. McCrae, from R.F.C., and to be seconded for duty with R.F.C.; Aug. 2nd, 1916.

The under-mentioned Warrant Officers, N.C.Os. and men to be Temporary Second Lieutenants (on probation):—

For duty with R.F.C.: Corpl. M. P. Mullery, from R.F.C.; July 12th, 1916. Aug. 2nd, 1916: Sergt. T. S. L. Mann, from R.F.C.; Bombr. W. E. Cass, from R. Can. H.A.; L.-Corpl. A. Kock, from Alberta Dns.; Aug. 3rd, 1916. Aug. 4th, 1916: Flight-Sergt. J. B. Waddoup, from R.F.C.; Sergt. R. J. Muxworthy, from R.F.C.; 1st Class Air-Mechanic B. Pool, from R.F.C.; 1st Class Air-Mechanic H. S. Wilkins,

from R.F.C.; 1st Class Air-Mechanic N. Glover, from R.F.C.; 1st Class Air-Mechanic L. Norris, from R.F.C.; Pte. F. Libby, from Can. Ord. Corps; Dr. W. M. V. Cotton, from Can. A.S.C.

**Memorandum.**—Second Lieut. (on probation) E. J. Pascoe, from Lan. Fus., Special Reserve, to be Temporary Second Lieutenant (on probation) for duty with R.F.C.; Sept. 3rd, 1916.

The following appeared in a supplement to the *London Gazette* issued on September 4th:—

**Park Commanders.**—From Equipment Officers, and to be Temporary Majors whilst so employed:—Aug. 1st, 1916: Second Lieut. (Temporary Capt.) M. D. Methven, Lond. R. (T.F.); Second Lieut. (Temporary Capt.) H. Lee, Special Reserve.

**Equipment Officers.**—From Assistant Equipment Officers:—Aug. 1st, 1916: Temporary Capt. W. Wade, General List; Temporary Capt. E. A. Goodwin, General List. From Assistant Equipment Officers, and to be Temporary Captains whilst so employed: Second Lieutenants, Special Reserve: H. P. Boot, T. Worswick, A. F. Palmer, E. Bush; Aug. 21st, 1916.

**Flying Officers.**—Aug. 4th, 1916: Temporary Lieut. A. P. Maurice, A.S.C., and to be transferred to the General List; Second Lieut. H. Slingsby, Special Reserve; Second Lieut. F. H. Bowyer, R. W. Surr. R., and to be seconded. Aug. 6th, 1916: Lieut. L. R. Briggs, Lond. R. (T.F.), from a Balloon Officer; Second Lieut. L. V. Drake, Denbigh Yeo. (T.F.); Temporary Second Lieut. W. G. Barlow, General List. Aug. 7th, 1916: Second Lieut. A. D. Pocock, Special Reserve; Second Lieut. L. L. M. Evans, Special Reserve. Temporary Second Lieut. C. H. M. King, General List, from a Flying Officer (Observer); Aug. 8th, 1916. Aug. 10th, 1916: Second Lieut. (Temporary Capt.) J. M. Robb, North'd Fus. (T.F.); Temporary Second Lieut. D. H. Manwaring, R. W. Kent R., and to be transferred to the General List.

**Adjutant.**—Lieut. R. Whitaker, Rif. Brig., from a Flying Officer (Observer), vice Major M. Freeman, Worc. R., Special Reserve; June 7th, 1916.

**Memorandum.**—2nd Class Air-Mechanic F. C. Zink, from R.F.C., to be Temporary Second Lieutenant for duty with the Military Wing of that Corps; Aug. 17th, 1916.

**Supplementary to Regular Corps.**—Second Lieut. R. H. Lane relinquishes his commission on appointment to the Canadian Expeditionary Force; June 17th, 1916.

Second Lieut. (on probation) H. C. Eltringham resigns his commission; Sept. 5th, 1916.

## Aeronautical Inspection Department.

The following appeared in a supplement to the *London Gazette* issued on August 30th:—

Second Lieut. L. F. Bennett, R.E.C., Special Reserve, to be Temporary Honorary Lieutenant, General List, whilst employed as Assistant Inspector, Aeronautical Inspection Department; July 15th, 1916.

The following appeared in the *London Gazette* of September 1st:—

Temporary Second Lieut. S. G. Young, General List, to be Temporary Honorary Lieutenant (without pay and allowances) whilst employed as an Assistant Inspector, Aeronautical Inspection Department; Sept. 1st, 1916. The under-mentioned to be Temporary Honorary Lieutenants on the General List (without pay and allowances) whilst employed as Assistant Inspectors, Aeronautical Inspection Department. Sept. 1st, 1916: Second Lieut. J. E. Appleyard, R.F.C., Special Reserve; Second Lieut. E. A. Salt, R.F.C., Special Reserve.

The following appeared in a supplement to the *London Gazette* issued on September 2nd:—

Temporary Second Lieut. A. B. D. Lang, General List, to be Temporary Honorary Lieutenant (without pay and allowances) whilst employed as an Assistant Inspector, Aeronautical Inspection Department; Sept. 1st, 1916.

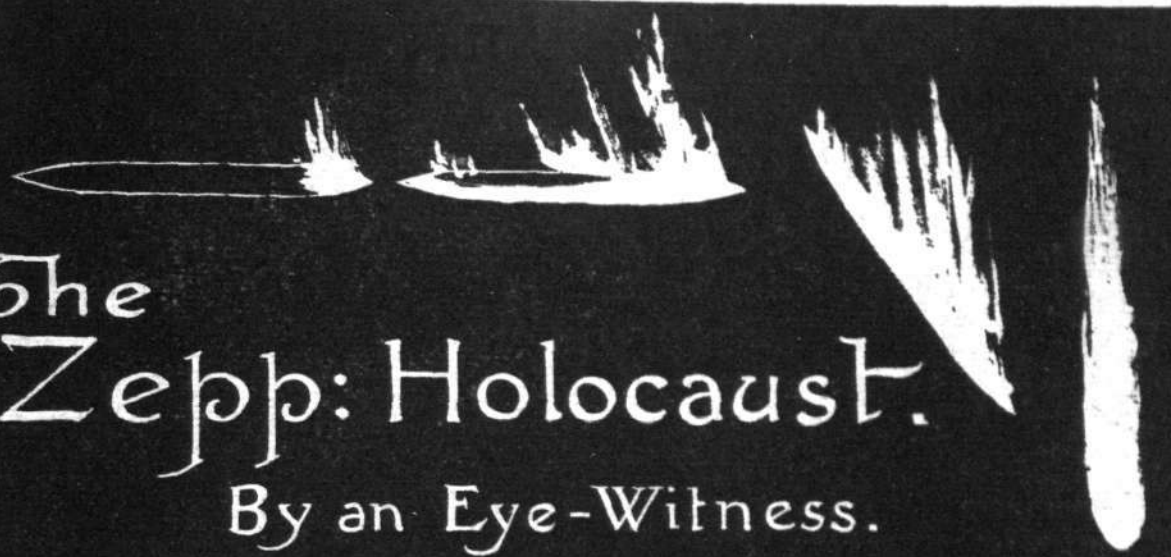


## Looping by Night Over Tokyo.

PRACTICALLY the whole of the two million population of Tokyo, Japan, turned out on the night of June 5th to see a looping demonstration by Art. Smith, an American pilot. He went up from the Aoyama ground at 8 p.m., his machine

showing one green and two red lights. At 2,000 ft. he switched off the lights, and after climbing 1,500 ft. in the dark he switched on a row of electric lights along his machine. He then made 13 loops, and landed safely at Aoyama. Early in the day, by permission of the Emperor, he had flown over the Imperial Palace.





# The Zepp: Holocaust.

By an Eye-Witness.

OF course, you have read all about the Zepp. raid in the early hours of last Sunday; everybody has. You have read of the wonderful things that she did, wonderful even for a Zepp. How she "wriggled" like an eel to escape the gun fire. How she stood absolutely vertical to climb. How she was seen to shiver as the shots got home, and all the rest of it. As I happened to see this particular airship from the moment the searchlights picked her up until she fell a flaming mass behind the trees, and as I happen to be engaged in aeronautics, perhaps one account more will make interesting reading, and possibly contain information as nearly correct as one with a knowledge of aviation can make it. I will tell of it exactly as I saw it.

I live in a district exactly in the path of the Zepps., when they steer a true course, I know within a little where to look for them, and I have seen every one that has visited the London area. On Saturday night, as early as ten-thirty the "raid feeling" was in the air. It was pitch dark. All the station lights were out, and six or eight searchlights persistently wavered round and round one little spot in the eastern sky. It was a night to sit up and read. Every half hour or so I went out to have a look round. Everything was very quiet with that breathless, expectant quietness heralding a coming storm. Once—it must have been about one o'clock—a blue fireball cut straight down through the air almost over my head, to burn out two hundred feet up. Still not a sound to be heard. At five minutes past two the air vibrated to the beat of distant engines. The searchlights roved the sky in scores. Suddenly, not to the east, but to the west, a light flickered for a moment on a long bright body, and instantly there she was, at least twelve thousand feet up, sailing due north, the centre of attraction for the whole outfit of lights.

In a moment the air was filled with the crash of guns, and shells screamed their passage towards their target. Slowly the airship turned on her course, and, steering due east, made directly for my overhead. When almost above me she turned her nose to the north-east, but drifted due north. She moved very

slowly, "crabbing" all the while, and I am pretty certain that her engines were not working, that she was temporarily disabled and drifting with the wind. I saw her quite plainly, end view and broadside on, and I give it as my opinion that she was a Schütte-Lanz, and that the shape of the envelope was very similar to the army S.L. 1 of 1909.

The "crabbing" north lasted for, I should say, five minutes, and then she appeared to get under power again and wore her nose round until she was steering almost due west, making back towards London, but some ten miles further north. Guns were pounding at her incessantly, and from my point of vantage the shells appeared to burst all over her: under and over and at both ends. Suddenly "something" happened, when every gun ceased firing as if by magic, and in the full blaze of the searchlights she sailed ahead. It was an ominous silence that seemed to tell of something *else* about to happen.

A little flicker of flame appeared at her nose, died down, and then burst into a bright light for about a fifth of her length. It lit the sky with a brilliant light that got more powerful as the flames ran along the envelope to the entire length. For a few moments I saw her full outline as a burning mass, during which time she continued to travel forward. Slowly, very slowly she dipped her nose, forming a graceful curve, and then stood end up. This was when, as the flames roared up from the front and joined with those farther back, apparently opening the entire envelope and liberating huge quantities of gas, the brightest light was shown.

Where I stood, ten miles away, it lit up the streets and woods until one could imagine it a glorious rosy sunset, for the flames were principally of a crimson colour. It is difficult to guess time under such circumstances, and watches unthought of with such a display in progress, but I should estimate the time from the moment she was hit until the final crash, which I distinctly heard, like unto plunging hot iron into water, as being three to four minutes.

The slow speed at which she fell was amazing to me. I had expected, once she got nose down, to see her move

at a terrific pace. But the mammoth appeared to be a huge mass of flame supported by a parachute. When yet some five thousand feet up, the light, especially at the lower end, turned to a brilliant ruby, lightening away through crimson and pink to an incandescent white at the top, the following flames, above, being pale yellow. Just at that moment there was a crackling as of exploding ammunition, or it might have been from the twisting of the girders, or the breaking of timber. Then she disappeared

behind the trees with a crash, and a final flare flashed up. I need not mention the cheers, they echoed throughout the whole of London, but in the district where I stood, we had another burst all on our own, as three coloured lights sprang into being and hung motionless in the sky, for we knew them for the guiding lights for the returning victorious airman or airmen.

Such is the story, given exactly as I saw it. As to time, I should judge the whole period during which she was under my notice as about fifteen minutes.

## ZEPPELINISMS.

THREE Iron Crosses were picked up in the wreckage, and one of them, together with a revolver, passed into the possession of Lieut. Robinson. A gold cross was also found.

THE storekeeper at Hill Farm Cottage, near where the Zeppelin fell, was not disturbed in his sleep by the crash.

ONE of the propellers fell a couple of hundred yards away from the main wreckage, just missing a small church on the edge of the field.

THE charred remains of the 16 victims were placed in this small mission church at Cuffley, being accorded a funeral at Potters Bar of a military character, attended by a detachment of the R.F.C., on Wednesday. Let us hope this will be interpreted at its true value as being an honourable tribute individually to men who, under superior orders, were doing what was necessarily their duty; not as an indication that we, in any shape or form, approve the form of warfare to which the Germans have illegitimately devoted their airships. In fact, quite the contrary.

AN inquest was held on Monday evening to inquire as to who 16 men of the crew of the wrecked airship L 21 met

their deaths, and the jury's findings were: (1) That on September 3rd 16 unknown German airmen were found dead in a wrecked Zeppelin airship. (2) That this airship was brought down by a British aeroplane, piloted by Lieut. Robinson. (3) That the cause of their death was injuries, the result of the destruction of the Zeppelin.

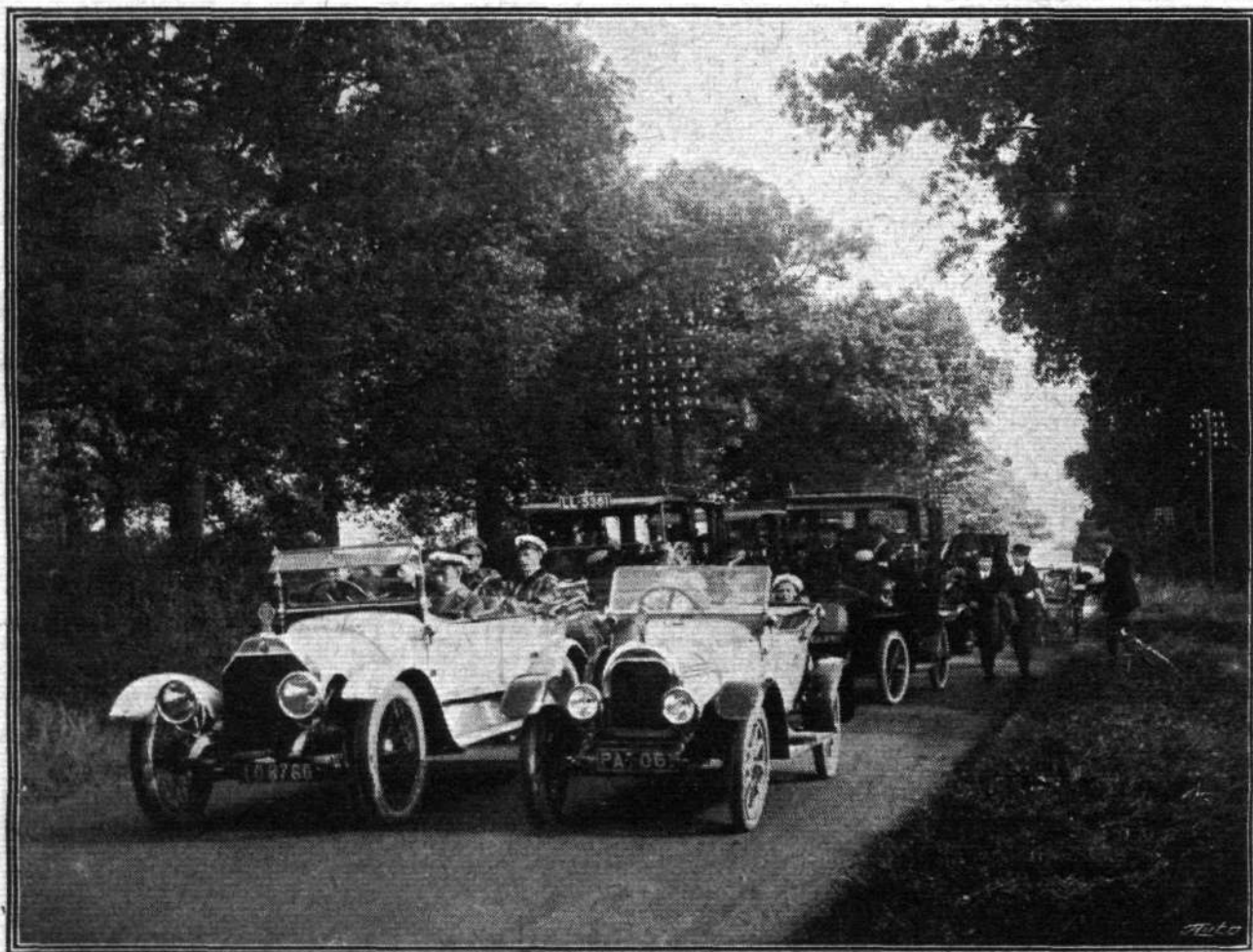
A CLOCK was found intact among the wreckage. The hands indicated that it had stopped at ten minutes past three. Was this by Berlin time, sun time or British clock time?

FOUR six-cylinder engines were found among the wreckage.

WHEN it was possible to approach the wreck the body of an officer was found with his left hand on a steering wheel, but his right hand had been torn away.

THE glare of the conflagration when the airship turned into a vertical position was seen at Southend, 37 miles away.

PEOPLE living near expected to hear a great crash when the wreck struck the ground, but one who was near states there was little noise beyond the crackling of the burning wood and the explosion of small-arm ammunition.



A contingent on the way to the scene where the raider "alighted."



PIECES of the fallen Zepp. as souvenirs appear to be more numerous than authentic, though many are genuine enough. A soldier is said to have sold a button from a German uniform for 5s., and a fire-marked mark fetched the same price. This is the highest mark the mark has reached since the war started. Quite high-water mark.

THE amount of wire found in the fallen airship is astounding, as is also the fact that it lived through the intense heat without reaching the melting point. A suggestion put forward is that this wire should be given to the Red Cross Society to be cut into short strips and sold, mounted on little cards, as relics of the first German Zeppelin brought down on English soil, as most of the many million people who saw that Zeppelin ablaze over London would buy a bit, and the Red Cross Society might be much the richer.

It is said that the track of the vessel after it was fired is easily traced by the exploded small-arms ammunition, all the brass cases of which have split with the explosion.

THE airship brought down was not the only one to receive a hot reception, and at about the same time, according to a correspondent.

HE informs us that after the wrecked airship had disappeared in a mass of flames, he saw another one which appeared to be in difficulty.

ON one occasion, our correspondent says, she stood on her

tail as if about to give a demonstration of what a Zepp. is capable of in the way of climbing, only she reminded him of a man taking a running leap at a ditch, his feet slipping at the last moment and he landing in the middle of the ditch.

APPARENTLY her engines forsook her at the critical moment, for she merely struck the dramatic attitude, without, however, seeming to get on with the climbing.

SOON afterwards she appeared to be hit, and drifted rather than cruised into the clouds.

PART of a gondola with its supporting wires and other apparatus has been found in an East Anglian coast village.

A PETROL tank, apparently jettisoned from one of the returning airships, has also been found in East Anglia.

SOME of the raiders on their way home attempted to bomb vessels in the North Sea—it was a pity to waste them or carry them home—but in no case was damage caused.

FISHERMEN who returned to Esbjerg on Monday night reported that on Sunday forenoon outside the territorial water limit off the Sylt they saw five Zeppelins going in an easterly direction. At 11 o'clock another Zeppelin appeared, going very slowly. The crew was engaged throwing articles overboard in order to keep the airship out of the sea. The Zeppelin, which was severely damaged, is supposed to have fallen on the water between the Sylt and the Schleswig coast.

## THE "X" AIRCRAFT RAIDS.

### "X 46" Raid, September 2nd and 3rd.

THE following official *communiqués* have been issued by the Field-Marshal Commanding-in-Chief Home Forces:—

September 3rd, 12.10 a.m.

"Shortly before 11 p.m. our Eastern Counties were attacked by several hostile airships. Bombs have already been dropped at a few places, but no details are yet to hand to show how many raiders are engaged and what their objectives may be. The raid is still in progress. A further *communiqué* will follow."

3.45 a.m.

"The attack to-night was made by a larger number of airships than have ever previously raided England. The Eastern Counties and London were apparently their objectives. The attack on London was beaten off, and one raider was brought down in flames. Many bombs were dropped in widely separated localities, but no reports of casualties or damage have yet been received."

1.35 p.m.

"Last night's raid was carried out by 13 airships, and was thus the most formidable attack which has been made on this country. The principal theatre of operations was the Eastern Counties, and the objectives seem to have been London and certain industrial centres in the Midlands. The new measures taken for the reduction or obscuration of lights undoubtedly proved most efficacious, for the raiding squadrons, instead of steering a steady course as in the raids of the spring and last autumn, groped about in the darkness looking for a safe avenue of approach to their objectives. Three airships only were able to approach the outskirts of London. One of them appeared over the northern districts at about 2.15 a.m., where she was at once picked up by searchlights and heavily engaged by anti-aircraft guns and aeroplanes. After a few minutes the airship was seen to burst into flame and to fall rapidly towards the earth. The ship was destroyed; the wreckage, engines and the half-burned bodies of the crew being found at Cuffley, near Enfield.

"Our experts hope to be able to reconstruct certain portions of the framework. The large amount of wood employed in the framework of the Zeppelin is startling, and would seem to point to a shortage of aluminium in Germany.

"The other two ships which approached London were driven off by the defences without being able to approach the centre of the city. A great number of bombs were dropped promiscuously over the East Anglian and the South-Eastern Counties, but complete reports of casualties and damage have not yet been received. Those to hand indicate that the damage and loss of life are not heavy considering the number of the ships engaged, a great number of the bombs dropped having fallen either in the sea or in remote country districts.

"It is hoped that any persons who have picked up fragments of the wrecked airship will submit them to General Headquarters, Home Forces, the Horse Guards, Whitehall, without delay. If of no value in the reconstruction of the

airship they will be returned to the owners. It should be remembered that the retention of such articles constitutes a contravention of the Defence of the Realm Regulations, Section 35 B. A statement of casualties will be issued to-morrow."

6 p.m.

"Careful inquiries show that the casualties and damage caused by the air raid last night were quite disproportionate to the number of ships employed.

"The number of casualties which have been reported are as follows:—

"Killed: 1 man, 1 woman.

"Injured: 11 men and women and 2 children.

"No casualties occurred in the Metropolitan Police District.

"The latest reports show that in the Metropolitan Police District 25 houses and some outbuildings were slightly damaged, two water mains were cut and three horses killed. Elsewhere the damage was very slight, a certain number of cottages being damaged, as well as a church, while a fire occurred at some gas works.

"No military damage of any sort was caused."

September 5th.

"An important part of one of the enemy's airships which raided England on the 2nd and 3rd inst. has been picked up in the Eastern Counties.

"There is no doubt but that the ship suffered severe damage from gunfire.

"The airship which fell near London passed through heavy and accurate gunfire, but it is established beyond doubt that the main factor in its destruction was an aeroplane of the R.F.C., which attacked with the utmost gallantry and judgment and brought it down.

### German Version.

Berlin, September 4th.

"During the night of September 2nd-3rd several naval airship detachments bombarded the fortress of London and the fortified places of Yarmouth and Harwich, as well as factories and places of strategical importance in the south-eastern counties and on the Humber.

"Everywhere good effects could be observed, both on account of the violent fires which broke out and the explosions. Notwithstanding a strong bombardment all the naval airships returned undamaged.

"At the same time a number of army airships executed an attack on southern England."

To the above the Press Bureau issues the following note:—

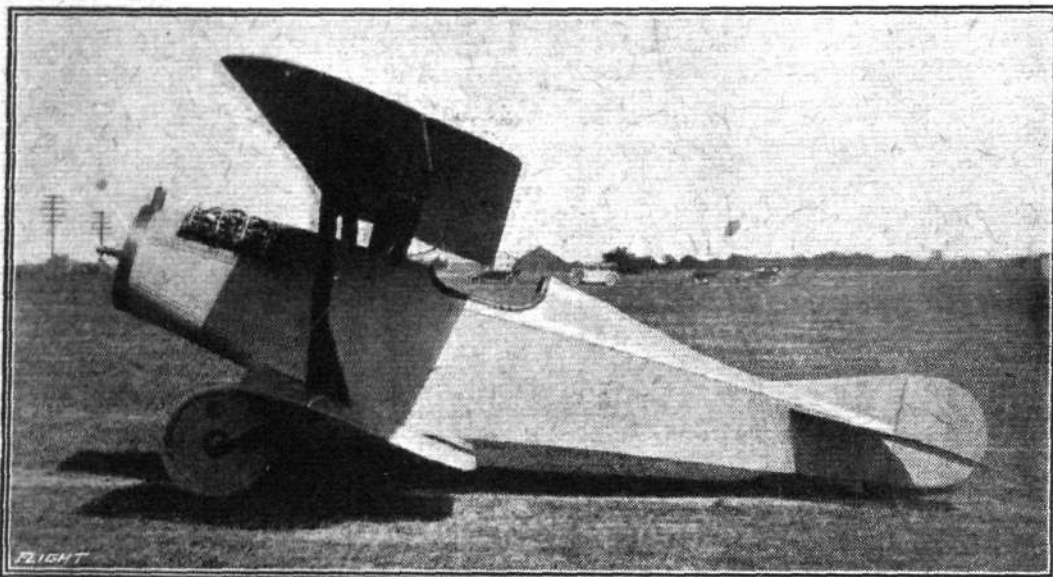
"The damage done, that is to say, practically nil, is exactly what has been reported in the official *communiqué*. There were no conflagrations of any importance and no explosions.

"There is, moreover, the strongest reason to believe that another airship in addition to the one destroyed was very seriously damaged."

In a later report issued in Berlin it was admitted that "one of our vessels was brought down by enemy fire."

## A NEW CURTISS "WIRELESS" SCOUT.

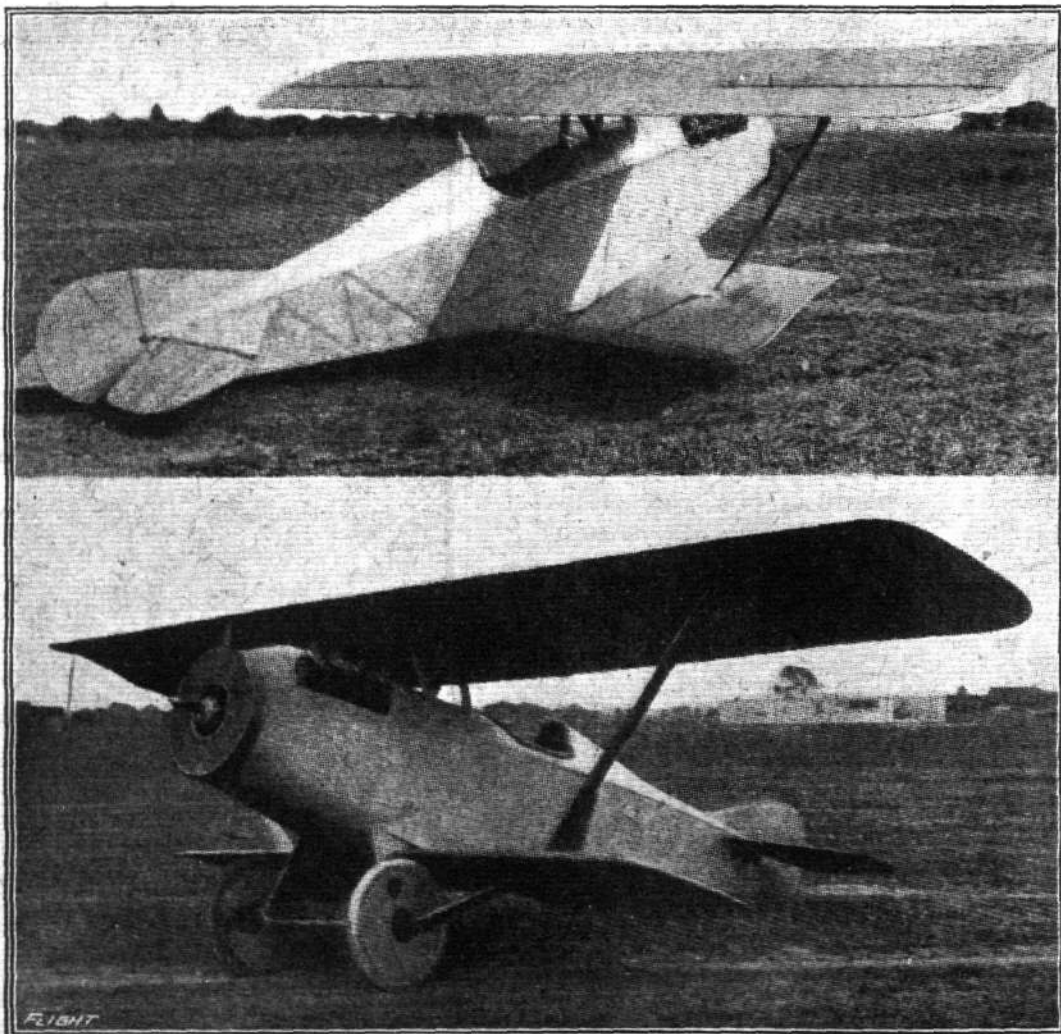
ON August 9th some very interesting trials were carried out at the Curtiss Aerodrome, Buffalo, N.Y., when Victor Carlstrom, the well-known Curtiss pilot, carriage is also of an unusual type. In addition to the usual "V" chassis, there are struts sloping backwards and outwards from the axle to the lower wing spars at the point where is attached the inter-plane struts. When the machine is in the air, these struts, it will be seen, are working in tension, thus partly taking the place of the usual lift wires. Some slight "cleaning up" changes in the design including an annular conical stream-lined casing over the boss of the tractor screw, are being made which will, it is anticipated, increase the speed of the machine to about 125 m.p.h. The span of top plane is 21 ft. 10 ins., and bottom plane 11 ft. 3 ins.



Side view of the Curtiss (Type S-2) "wireless" scout.

put the new Curtiss model S-2 "wireless" scout through her paces. Equipped with a 100 h.p. Curtiss engine, the machine made a speed of 119 m.p.h. over a measured course. This is claimed to be a world's record for speed with an engine of this power.

As regards the body, the new scout, it will be seen, is very similar to the previous type Curtiss scout, but several alterations are noticeable in the arrangement of the main planes. In the first place, the lower wing is of quite short span, and a single strut on each side connects it to the upper wing. This strut is spread out at its upper and lower ends so as to take care of the travel of the centre of pressure for various attitudes of the wing. No external wire bracing of any kind is employed in the wing structure, the single strut effecting all the trussing. The under-



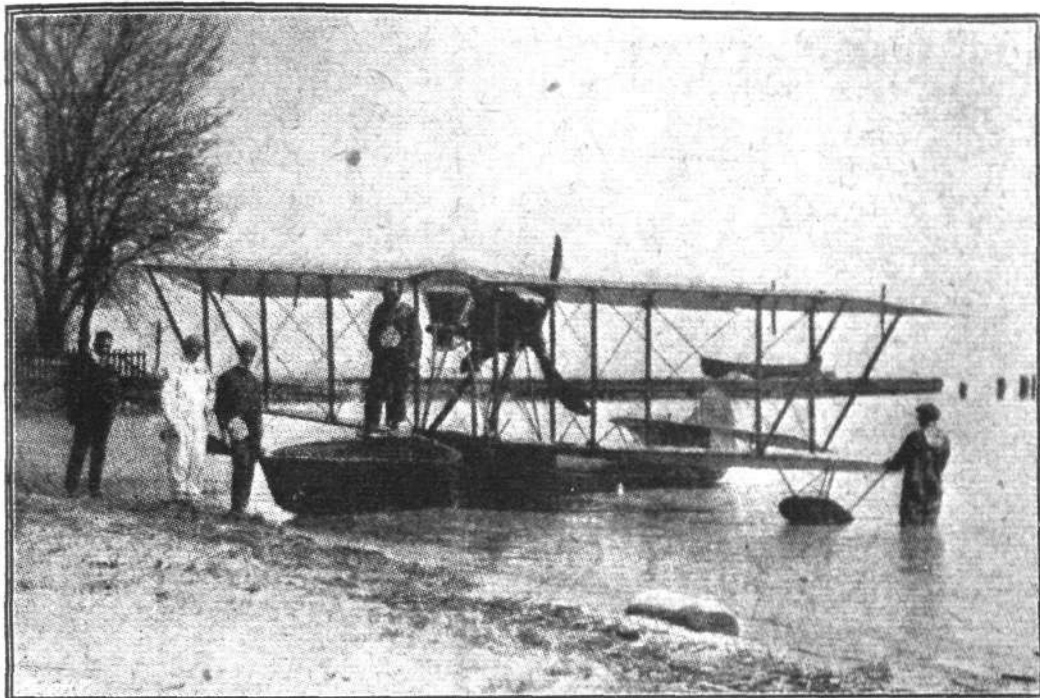
Three-quarter rear view and three-quarter front view of the new Curtiss "wireless" scout.



# THE GENERAL AEROPLANE CO.'S FLYING BOAT.

REALISING the increasing popularity of the flying boat among sportsmen in the States, more and more of the American manufacturers are turning their activities in that direction. Among others, the

planked, with aluminium bulkheads forming four watertight compartments, and has a concave vee bottom, with off-sheered deck and D-shaped tail. Aluminium handhole covers are provided, rendering

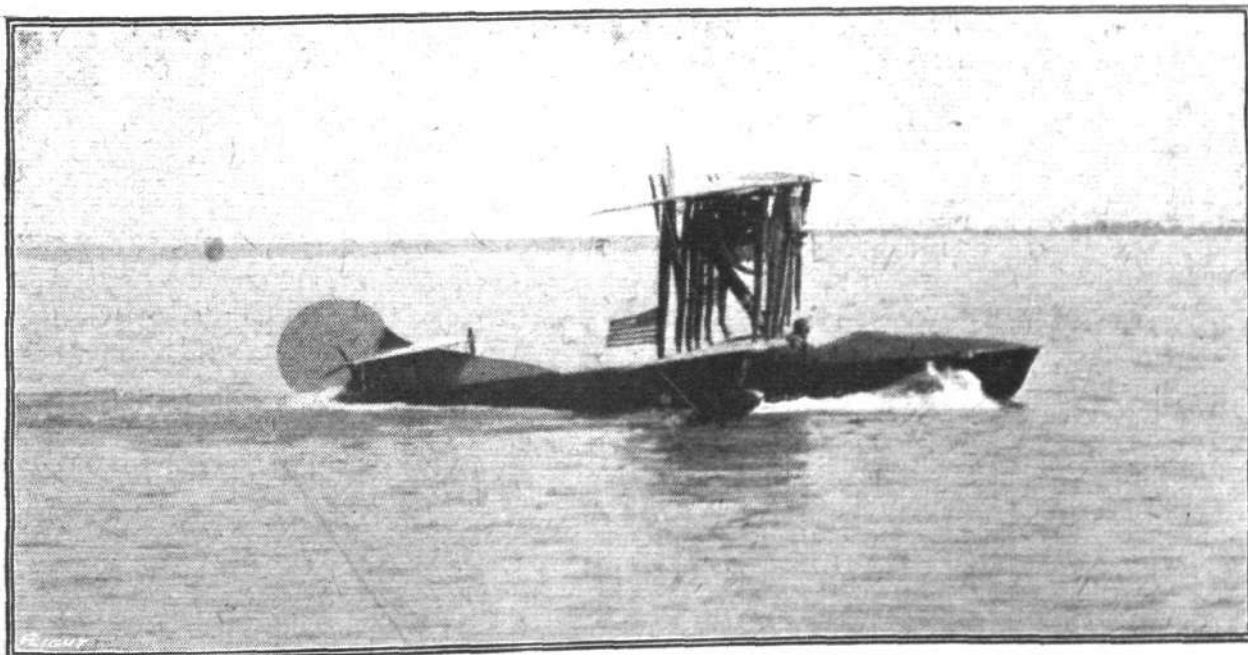


A general view of the General Aeroplane Co.'s flying boat.

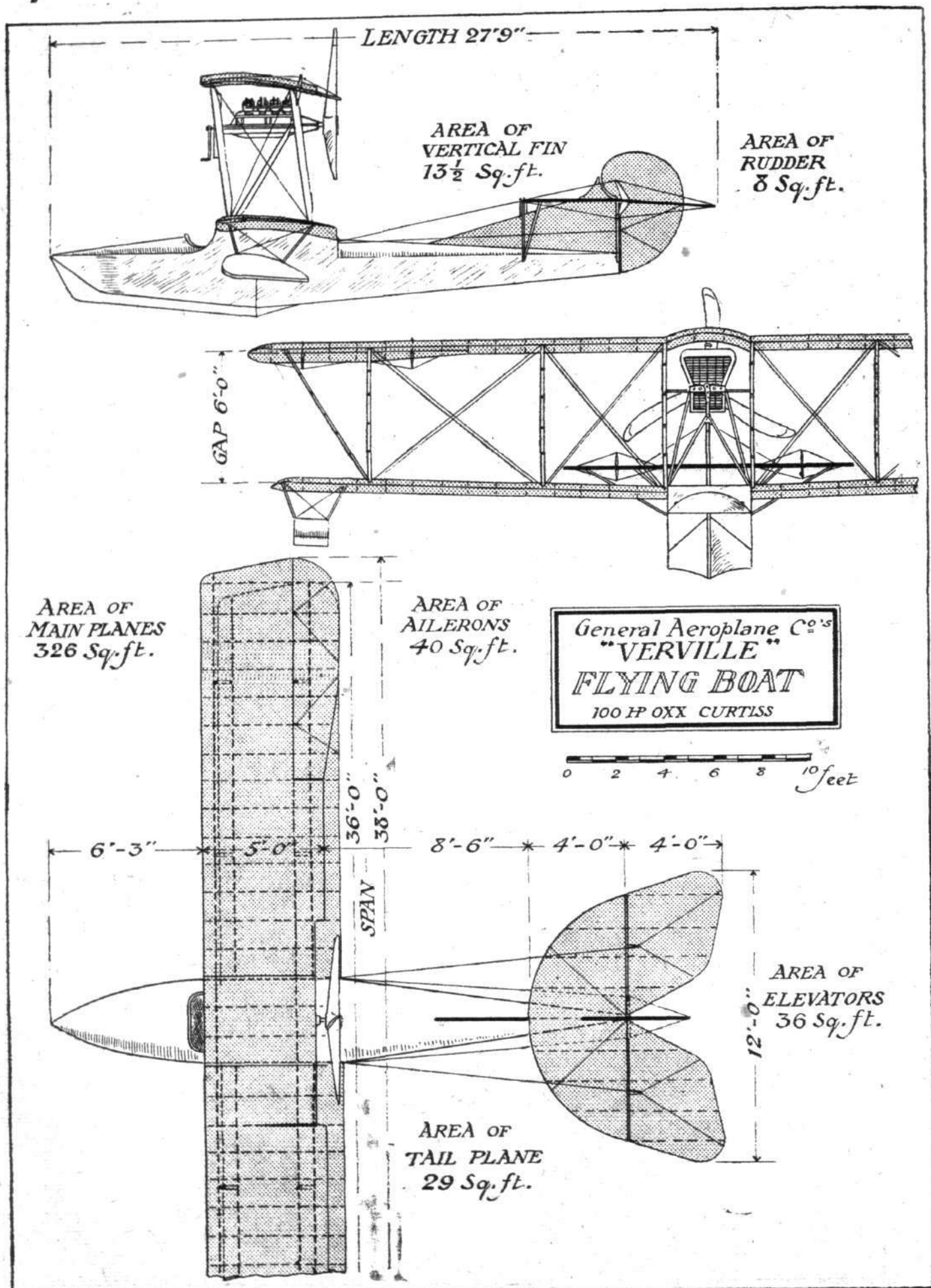
General Aeroplane Company, of Detroit, Mich., have recently produced a flying boat that is especially adapted for sporting purposes, and its general lines are shown in the accompanying scale drawing and illustrations. In the "Verville" flying boat, named after its designer, Alfred V. Verville, the Company has aimed at producing a craft embodying the best principles of construction with an efficient design rather than to attempt anything in the way of novelty.

The hull is built up of Honduras mahogany double-

access to various parts of the hull. The cockpit, which seats two side-by-side, is veneered with  $\frac{1}{8}$  in. Honduras mahogany and upholstered with green leather, filled with "Kapok." The polished mahogany dash-board is equipped with altitude barometer recording to 15,000 ft.; "Tycos" inclinometer; "Tycos" speed indicator; "Tel" revolution indicator; petrol tank pressure gauge, oil pressure gauge, electric light switch, dash-board light, motor cut-out switch, hand throttle and magneto spark control. Four special Tungsten cells for lighting purposes are



The General Aeroplane Co.'s flying boat taxiing on the water.



THE GENERAL AEROPLANE CO.'S FLYING BOAT.—Plan, front and side elevation to scale.



provided, and the hand-pump is located in a convenient position for the pilot at the side of cock-pit. The two streamline wing-floats are of mahogany, and have a displacement capacity respectively of 200 lbs.

The main planes are divided into sections, three for the top and two for the lower. The top planes are attached to a centre plane-section—which, it will be observed, is peculiar in that it is arched—supported above the boat by two pairs of struts, whilst the lower plane sections are mounted on the hull.

A highly efficient wing section (Eiffel) suited to the requirements of this type of machine is employed, and the planes are built up in the orthodox way on two main spars with ash compression ribs, and spruce webs and battens. Shelby oval steel tubing is used for the trailing edge, and the whole wing structure is braced with strong Roebling aviator wire. The framework is covered with Irish unbleached linen (having strength in weft of 91 lbs. per linear inch, and in warp of 103 lbs.) doped with nine coats of Emaillite, and surfaced with three coats of spar varnish. The interplane struts are of Virginia silver spruce, well seasoned and shellaced, and bound with grey silk ribbon to relieve shattering. The strut sockets are clamped around wing spars, thus avoiding the necessity of the securing bolts piercing the spars.

Hinged to extremity of top plane rear spar by five cold rolled steel hinges are the *ailerons*, which are interconnected. Lynite pulleys, having brass bushings throughout, are used for the control gear.

The tail planes consist of a semi-circular stabilising plane, mounted above the stern of the boat, to which the two elevator flaps are hinged, and a triangular vertical fin, to which the partly-balanced rudder is hinged. Either Deperdussin, Curtiss, or the makers' "three-in-one" systems of control may be fitted.

The engine, a 100 h.p. Curtiss OXX, is mounted above the hull under the top plane centre-section, and drives direct a three-bladed "Paragon" propeller, 8 ft. 3 ins. diam. by 5 ft. 6 ins. pitch, constructed of oak tipped with copper. A flat copper-tube cellular type radiator, in nickel-plated brass casing, and weighing 41 lbs., is mounted in front of the engine. The water capacity is 2½ galls. Starting the engine is accomplished from the cock-pit by means of a crank-handle.

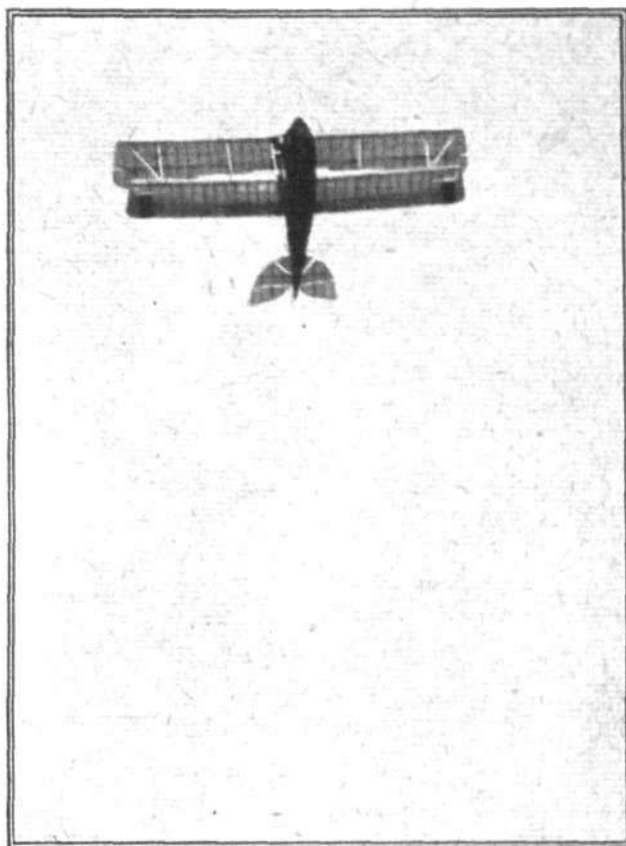
#### Air Warfare in August.

AN interesting summary of the results of fighting in the air during the month of August has been compiled by the *Times* as follows:—

"Judged by either the number of combats fought or the number of machines brought to earth, the air war on the Western front during August was far more intense and disastrous than in any one month since hostilities began.

"The total number of machines actually recorded in the British, French, and German *communiqués* as having been shot or driven down, destroyed or put out of action, or forced to land is 189. But this does not complete the tale of losses, inasmuch as British Headquarters twice reported that 'several' enemy machines had been driven down, and once that 'many others' had shared this fate in addition to the four specially given. Even the most modest construction of the general expression 'several' or 'many' would bring the grand total of the month's losses to over 200. Taking the actually recorded figures, 189 in August compares with 165 in July and 77 in June.

"The German flying service has suffered the most heavily. During the month 121 of its machines have been destroyed or driven down. As by far the largest number of aerial fights take place over the German lines, it is impossible to



View from below of the General Aeroplane Co.'s flying boat in flight.

A factor of safety of seven is used throughout the machine. All wiring is doubled (factor of safety taken on one cable), and French "National" turnbuckles are used exclusively; all cable is wrapped with copper wire, sweated with solder and at least three ins. long; control cables are extra flexible 19-strand cotton centre Roebling grade wire. Metal parts are either nickel or treated with non-corroding metal enamel.

The main characteristics are as follows:—

Span: top 38 ft., bottom 36 ft.; gap, 6 ft.; cord, 5 ft.; gliding angle, 1 in 7; length over all, 27 ft. 9 ins.; speed range, fully loaded, 42-70 miles per hour; weight (loaded), 2,050 lbs.; weight (unloaded), 1,450 lbs.

say how many of those driven down are destroyed and how many are merely damaged and put out of action for a greater or less period. Of the 121, British airmen claim 33 and French airmen the remaining 88.

"British Headquarters acknowledges the loss of 21 machines either in air fights with the enemy or by his gunfire, while five others, overtaken by a storm, failed to return. The Germans specifically claim only nine British and six French victims; the other 53 are simply classed as "enemy" machines. It is worth pointing out, as further proof—if that were needed—of the enterprise of British and French airmen in going out to meet the enemy over his own lines, that the German reports state that 21 aeroplanes were brought down by anti-aircraft gunfire. At the most 12 German machines were so accounted for by the French, and an even smaller number fell to British gunfire from the earth."

#### The Lights of London.

A NEW lighting order on the lines of that in force in the provinces came into effect in London on September 1st. It directs that all exterior lamps, except those specified by the police as necessary for the public safety, must be extinguished, while interior lights must be so shaded that no part of the pavement or roadway or any building, &c., is illuminated.

## THE FLYING SERVICES FUND—Administered by THE ROYAL AERO CLUB.

THE Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers, and men.

Forms of application for assistance can be obtained

from the Royal Aero Club, 166, Piccadilly, London, W.

Subscriptions.		£	s.	d.
Total subscriptions received to Aug. 29th, 1916		10,826	16	5
F. R. Simms			1	10
Collected at the Westland Aircraft Works, Yeovil (Forty-sixth contribution) ..			0	15

Total, September 5th, 1916 .. 10,829 1 5

166, Piccadilly, W. B. STEVENSON, Assistant Secretary.

## THE ROLL OF HONOUR.

THE Secretary to the Admiralty announces the following casualties:—

### Seriously Injured.

Flight Lieut. Cyril Tollemache, R.N.  
Prob. Flight Sub-Lieut. H. E. Love, R.N.

### Accidentally Injured.

Flight Sub-Lieut. L. E. Lander, R.N.  
Lieut. J. Neale, R.N.V.R.

### Slightly Injured.

Flight Sub-Lieut. J. A. Harman, R.N.

### Previously reported Missing, now reported Killed.

Flight Com. C. E. Robinson, R.N. (Capt., R.M.L.I.).

The following casualties have been officially announced by the War Office:—

### Killed.

Second Lieut. D. Clarke, R.F.C.  
Second Lieut. H. C. Marnham, Yeomanry and R.F.C.  
Second Lieut. J. C. M. Stewart, W. Yorks Regt., attd. R.F.C.  
Lieut. W. Stobart, Durham L.I. and R.F.C.  
Second Lieut. H. C. Tetlow, A.S.C. and R.F.C.

### Previously reported Missing, believed Killed, now reported Killed.

Second Lieut. E. G. Ryckman, R.F.C.

### Previously reported Missing, now reported Killed.

Second Lieut. C. V. Hewson, R.F.C.  
Second Lieut. C. E. Rogers, R.F.C.  
Second Lieut. R. P. Turner, R.F.C.  
Major F. F. Waldron, R.F.C.

### Died.

7339 1st Air-Mechanic S. A. Holmes, R.F.C.

### Previously reported Wounded and a Prisoner of War, now reported Died of Wounds as a Prisoner of War in German Hands.

Second Lieut. H. Floyd, R.F.C.



### Fatal Accidents.

At an inquest held relative to the death of Second Lieut. G. W. Hall, R.F.C., it was stated that on returning from a cross-country flight on August 27th he turned into the wind and banked the machine steeply, with the result that it nose-dived to the ground. A verdict of "Accidental death" was returned.

An inquest was held on Second Lieut. H. C. Jacks, R.F.C., on September 2nd. It was stated that when making a turn 500 ft. up the machine side-slipped and then nose-dived. The wreck caught fire. A verdict of "Accidental death" was returned.

### Another Fokker to be on View.

ONE feature of the National Economy Exhibition which will doubtless prove very attractive will be a captured Fokker monoplane. We believe it is very little different to the one of which scale drawings and full description were given in "FLIGHT" of December 10th, 1915, except that it has a 100 h.p. engine instead of 80 h.p. The exhibition opens at the People's Palace, Stepney Green, on September 18th for a fortnight.

### Wounded.

Lieut. M. T. Baines, Yeomanry and R.F.C.  
Second Lieut. G. R. Bolitho, Devon Regt., attd. R.F.C.  
Lieut. W. H. Bragg, R.F.A. and R.F.C.  
Second Lieut. R. E. Dangerfield, R.F.C.  
Second Lieut. L. A. Davis, R.F.C.  
Second Lieut. J. M. Drysdale, R.F.C.  
Lieut. W. E. Harper, Durham L.I., attd. R.F.C.  
Second Lieut. W. R. E. Harrison, R.F.C.  
Second Lieut. C. D. Kershaw, D. of Wellington's Regt. and R.F.C.

Capt. C. C. Miles, R.F.C.

Capt. J. T. Powell-Whittaker, A.S.C., attd. R.F.C.

Second Lieut. H. M. Probyn, R. Warwick Regt. and R.F.C.

Second Lieut. L. D. Russell, R.F.C.

Second Lieut. L. T. Smith, Middlesex Regt. attd. R.F.C.

Second Lieut. J. C. Taylor, K.O. Scot. Bord., attd. R.F.C.

Second Lieut. G. S. Wood, Durham L.I., attd. R.F.C.

### Previously reported Missing, now reported Wounded and Prisoners of War in German Hands.

Lieut. J. R. Dennistoun, Cavalry Spec. Res. and R.F.C.  
Lieut. H. B. Russell, R.F.A. and R.F.C.

### Missing.

Second Lieut. S. P. Briggs, Northampton Regt., attd. R.F.C.

Second Lieut. E. C. Callaghan, R.F.C.

Lieut. H. M. Corbold, R.F.C.

Second Lieut. R. T. Griffin, R.F.C.

Capt. R. G. Hopwood, Rif. Brig. and R.F.C.

Second Lieut. A. W. Reynell, R.F.C.

Second Lieut. C. Smith, W. Yorks Regt., attd. R.F.C.

Second Lieut. R. FitzR. Talbot, R.F.C.

Second Lieut. K. K. Turner, Gen. List, attd. R.F.C.

Lieut. R. D. Walker, R.F.C.

### Previously reported Missing, now reported Prisoner of War in German hands.

Second Lieut. D. H. Macintyre, Arg. and Suth'd. Highrs. and R.F.C.

### Previously Unofficially, now Officially, reported Prisoner of War in German hands.

Second Lieut. J. W. Toone, R. Irish Regt. and R.F.C.

### Ferdinand in the Cellar.

ACCORDING to information received in Zurich, King Ferdinand of Bulgaria is so scared of pilots from Salonica visiting Sofia that he has taken to sleeping in a cellar which has had its roof strengthened with steel plates.

### Zeppelins in a Storm.

EIGHT Zeppelins were seen from various points in Holland during the evening of August 29th. Shortly afterwards a heavy thunderstorm broke and the airships returned, but two remained cruising near Vlieland for some hours, apparently hoping for a change of weather.

### Further Aeroplanes from Australia.

A CABLE message from Melbourne states that the Australian Commonwealth Government has offered a further flying squadron to the Imperial Government, and the offer has been accepted. It will be recalled that an air squadron, comprising 28 officers and 180 men from Australia, was presented in February last.

The promise of the New South Wales Government to duplicate the gift for fighting aeroplanes to the War Office made by the citizens, has now been redeemed, says a message from Sydney.





By THE

["DREAMER."]

IN a period of time not averaging one second to a man I saw them destroyed. Twenty there were, perhaps even thirty, and I cheered. Like the rushing of a great wind through the forest that noise of cheering and clapping of hands arose from the darkened streets where previously voices were hushed in strained expectancy, where nerves danced to the insistent music of the guns.

Twenty there were, perhaps even thirty of my fellow men. Sons, brothers, husbands, fathers of little children who had thought of their father only that very evening at bedtime. Men of brains and ability. Men of a race high in science, in music, in literature, burned to death, their bodies turned to a charred mass in mid-air within the twinkling of an eye by a raging hell of fire that lit up the countryside like a gorgeous sunset.

In that moment of victory I lent my voice to the multitude, who cheered and cheered again. Five minutes afterwards I sat down and asked myself, "What am I? What are we all?"

Like a beam of silvery light she appeared in the darkened heavens. Slowly, without perceptible effort, she glided like a protecting angel keeping watch and ward over a sleeping world. A monument of magnificence to man's ambitions; testifying to his skill and ability in his aims and desires towards—what?

The answer came in the boom of guns, guns that viciously spat out missiles of destruction, guns that vomited potential annihilation to all in their path, guns whose every effort was directed towards annihilating that glimmering body of beautiful proportions and her living freight.

For that glittering body had been devised from the cunning of man's brain not for love of the beautiful. Not for any idealic purpose had the beautiful workmanship produced by men's fingers been welded into that wonderful silver ship sailing serenely above the clouds, emblematic of the poetry of motion in its highest possibility. Siren of old never presented fairer form to the Homeric seamen of Italy; none ever had greater wish to slay than this silver nymph. Sons were up there, brothers and husbands. Fathers, whose little children had thought of them in their prayers at bedtime, here sailed the night-sky endeavouring to destroy by fearful sudden death children in the darkness beneath. Fathers of those children beneath endeavoured to prevent the fulfilment of childish hopes and prayers by dealing death in mid-air. And because this is the twentieth century, because man was never so enlightened as he is to-day, because we are no longer barbarians, because of the progress of art and love and music and poetry, because of the mighty strides science has made in its bacterial researches with the object of protecting

humanity, I could lend my voice to the multitude and cheer and cheer again at the sight of twenty, perhaps even thirty, of my fellow creatures burning to death 'twixt earth and sky.

Not always have I added my voice to the multitude to cheer at disaster. Time was—before the mad Hun set in to teach the world kultur—that I lent my pen as proxy for my voice to the multitude to condone with Germany in the loss by fire of her Zeppelin L 2.

With 28 persons on board the L 2 started from Johannisthal Aerodrome on the morning of October 17th, 1913. Within three minutes she was falling a flaming mass, not one single person of her human freight escaping with life. All the world sorrowed, and one of the first messages of sympathy was addressed by President Poincaré to the German Emperor.

As a unit in the multitude of genuine sorrowers I lent my pen. As a unit in the multitude of cheerers I lent my cheer just three years later. As a human being I sat down afterwards with mixed feelings and asked myself what I am, what we all are.

Under different circumstances I could go out to those poor charred bodies with tears in my eyes at their fate. Those little children out there should never again be brought to suffer the grievous loss they have now suffered could I prevent it. But the circumstances are not different, they are what they are to-day, and to-night should the same thing happen I shall cheer and cheer again to the echo, nor shall I again ask myself what I am.

I and mine and all those around me are intended victims of the mad hate of a mad despot. Victim he may be of hallucinations of world's power. Possessed he may be that his way is the right way, and that the whole world would be the better for his governorship, son of hell incarnate he is that his endeavours to attain his heart's wishes should not stop short of the murdering of innocent women and children.

But yesterday I was a human being with human feelings for my fellow man. To-day I cannot go so far as to wish reprisals—I am not yet so inhuman as that, though God alone knows what I may come to be—I cannot condone the murder of innocents, at least not yet. But if those beautiful silvery ships of death come again, as I know full well they will come—indeed, if I could inveigle them over to their fate so that I could have the satisfaction of seeing repeated that which I saw last night, I would do so—in the consummation of my purpose, active and inactive. I shall cheer and cheer again. For I am one of the products of kultur in the making. When the war is over I will sit me down again, not to ask myself what I am or what I have been, but what I am going to be. I know what I am now.

## AIRISMS FROM THE FOUR WINDS.

AIR surprise No. 1 got home.

WHEN will the winner be announced of the three prizes—Mr. Joseph Cowen's £2,000, Lord Michelham's £1,000 and Mr. W. Bow's £500—offered to the first airman or airmen to bring down a Zeppelin on British soil?

SPAIN is launching out aviatically, and is taking up the early Blériot type for a standard.

At least that is the only conclusion to be arrived at if a "Royal" photograph and inscription sent round this week for publication by a prominent agency is to be credited.

A *réchauffé* is always a doubtful investment.

THE FOOLISH PROPHET.—"It is people who want titles who are telling us to-day that Germany is aiming to blow up London with a fleet of airships."—Mr. Ramsay Macdonald on August 2nd, 1908.

THROUGH Commander G. Grenville Grey the sum of £200 has been subscribed by various crews of the Anti-Aircraft Corps, to dedicate two bedrooms in the new extension of the Union Jack Club.

MR. G. H. MALINS, of the Gaumont Co., one of the special operators who are responsible for the photographs of the Somme film, must have stored up very extensive experiences of modern warfare. Previous to the Somme film—for about one-third of which Mr. Malins is responsible—he was out at the Front taking cinematograph pictures for a year, and prior to the opening of the great Push on July 1st he had cinematographed from an aeroplane the whole of the Belgian and the British front from a height of 10,000 ft. to 13,000 ft. A section of the pictures he took on this flight has been shown in the picture theatres, but the greater part has been reserved for the use of General Headquarters. For a time he took pictures on the French front near the Vosges. He had a narrow escape just before the great offensive, two bullets passing through his service cap as he was taking down his camera, which had been fixed in a trench with the lens placed between sandbags. He then made his way back to a village into which the Germans were dropping tear shells. Finding his car, which had been left there, he drove away, but both he and his chauffeur were so affected by the tear shells that the car fell into a ditch, where they left it, carrying the camera some miles along a shell-swept road, but eventually delivering the films.

MR. J. B. McDOWELL, the other operator responsible for the Somme film, is managing-director of The British and Colonial Kinematograph Co., and went out specially for this work a few days before the start of the British offensive.

COL. SIR CHARLES CHEERS WAKEFIELD has been appointed to the command of the City of London Volunteer Regiment.

WILL Sir Charles revise his decision not to be nominated for a second term of office as London's Lord Mayor?

SEVERAL of the City Companies have passed resolutions asking him to do so, and the movement is spreading.

THE Council of the British Association, at Newcastle, on Tuesday, unanimously nominated the Hon. Sir Charles A. Parsons to fill the office of president of the Association at the Bournemouth meeting next year.

THE R.N.A.S. is now represented on the Corrosion Research Committee, in connection with the Institute of Metals, which is studying the effect of sea water on condenser tubes.

RECENT contributions received by the Lord Mayor for the Lord Kitchener Memorial Fund include 100 guineas from the Sopwith Aviation Co., Ltd.

It might have been the new lighting regulations, or again it might have been the ground mist that caused the Zepps. to steer erratic courses, as though they did not quite know what's what. Of course, on the other hand, it might have been the guns, for these certainly made better practice than previously. It must have been quite sporty away up there, judging by the view from below.

DAME RUMOUR speaks of several new aerodromes which are in the making.

MORE down Bournemouth way and otherwise.

THE War Office pupils now arriving at Hendon will find much to be thankful for, in that friend Mitchell thought well to pitch his tent, as it were, just outside the aerodrome gates. Just as Mrs. Billing "mothered" the "pups" at the Brooklands Blue Bird in the pre-war days, so may these find a comfortable home here on the spot and midst picturesque surroundings, for the cosy tea cabins surrounded by lawn and flowers are to be turned into sleeping places for embryo pilots.

RATHER a contrast, this, to the old days, when those having the fancy to become of the air had to sleep in the hangars with the machines, breathing the fumes of oil, petrol and dope. Waking in the morning it was a case of washing in a bucket, and boiling the kettle by the aid of a blowlamp before the fragrant aroma of Bohea came as a blessing. Still, they were great days, and produced some of the best.

It is the custom for Lord Rothschild to entertain the City Beadles every year at Tring Park. This year the function has had to be passed, on account, we believe, of Lord Rothschild having placed his residence at the disposal of officers as a home of rest.

SOME men are born great, some achieve greatness, some have greatness thrust upon them, also places. Cuffley is now on the map for the first time, and with its three houses and an inn is probably for the moment the most talked of spot in the world.

THE Zepp. that came to an end at Cuffley was first picked up by the searchlights when flying straight away with London under her tail and no bombs dropped. Did she pass right over our little village without knowing it?

THIRTEEN Zepps. to thirteen casualties, including two deaths only, does not seem any great return for the biggest raid on record. The bringing down of the airship at Cuffley placed the balance of deaths a long way on the opposite side of the ledger.

WHAT could have been the cause of that intense ruby and crimson light in the burning airship? Can we take that and the non-dropping of explosive bombs in conjunction, and wonder whether this particular Zepp. was carrying something new for us in the way of frightfulness?

"It is a pity that before we can catch a Zeppelin we must blow it up. A captive Zeppelin with a colossal pin through it would make such a popular object of exhibition."—*Birmingham Daily Post*.

THIS month is the month of the harvest moon, when Fair Luna approaches some thousands of miles nearer our earth than usually. If any Zepps. arrive round and about the 9th, we should get a good view of them. But will they?

LAST week there appeared in "FLIGHT" another sort of Rader with Phil as prefix. Amusing as were the pages of the *Jersey Brow Gazette* under his manipulation, we find that his popularity amongst his brother officers and with the local tradespeople of the district in which his R.F.C. unit was temporarily located, has very materially waned since his very unofficial and sudden departure across the "herring-pond" became known. There are, in fact, besides the W.O., several who are wondering whether this "raider" of their pockets intends to desert them altogether. Harvard aviation students, please note.

THE captured Fokker monoplane, which is to be exhibited at the People's Palace shortly, does not, we understand, differ greatly from the one on view at the Horse Guards Parade some time ago, and which was so fully described and illustrated in "FLIGHT" at the time. She is fitted with a 100 h.p. Oberursel (German version of the Gnome) instead of an 80 h.p. engine of the same make, otherwise she follows along the same lines. Does not begin to touch the Morane, of which she is a "crib," for workmanship, or anything else for that matter.



THE "Super-Fokkers," of which so much was heard some time back, were not, of course, such formidable engines of war as they were "talked" up to be. They were very like the ordinary Fokker, with the exception that they were well stream-lined, hence their power to dive at a tremendous speed. They were probably of the "neutral stability" type—that is to say, having their c.g., c.l. and c.d. practically coinciding, and therefore quick on the controls.

THE practice of testing aeroplane motors in racing cars is growing in America. The hill-climb up the Pike's Peak highway, Cal., on August 12th was won by a Romano car fitted with an eight-cylinder aero motor of 402.12 cubic ins. displacement.

SOME interesting—in fact, "werry" interesting—developments may be expected in connection with the new Werry engine.

Pace the Censor. This much may be said, however, that it is of the horizontally opposed type.

BUT not the usual horizontally opposed type as we know it to-day.

SOME of the parts, of which there is ordinarily only one in each engine, are multiplied by two in the Werry, while in other instances the parts of which there are many in the orthodox motor are divided by two in the Werry.

FOR the present readers must try and think it out for themselves.

NOR the least valuable feature of the Werry engine is that it is possible to get at the valves of one cylinder and to replace them while the engine is running. The engine will, we understand, be made for a start in two sizes—one smaller one, to be air-cooled, and a larger one to be water-cooled.

THE aeroplanes of our new ally Rumania bear the French red, white and blue rosette.

ACTION is being taken by the Norwegian authorities against the captain of a Zeppelin who attempted to smuggle a cargo of rubber from Christiania, whether by Zepp. or otherwise deponent sayeth not.

THE aeroplane has once again come to the rescue in the case of an emergency. The trials of a U.S. Navy seaplane at Hammondsport were being held up by the non-delivery of a new propeller, which had been constructed at Buffalo, 119 miles away. It was impossible to send the propeller by rail in time, so a Model R. 5 Curtiss military biplane was requisitioned to "deliver the goods."

## FIGHTING ZEPHS. BY AEROPLANES.

A VIVID account of the work of the aeroplanes in attacking the raiding airships has been told by an officer of the Royal Flying Corps who assisted in the work. He said that the machine which he was piloting, a high-power biplane, had reached an altitude of nearly 10,000 ft. before he was able to engage the raider.

"Two other aeroplanes were endeavouring to engage the airship, which was making frantic efforts to get away, at the same time firing with machine guns. The Zeppelin was travelling at top speed, first diving and then ascending, and apparently Lieut. W. L. Robinson, who was the officer piloting the biplane which had first attacked the raider, anticipated the manoeuvre.

"The commander of the airship threw out tremendous black clouds of smoke, which completely hid him from our view, and in which he managed to rise. A few seconds later we saw the airship a couple of thousand feet above us, and at the same altitude was Lieut. Robinson, although a matter of, perhaps, half a mile away. Immediately Robinson

WITH the propeller lashed in front of the cock-pit, Victor Carlstrom started off from the Buffalo field, and arrived at Hammondsport 1 hr. 2 mins. later, having encountered a rainstorm en route. The test was then satisfactorily carried out, and on the following morning the aero-express carrier returned to Buffalo.

LIEUT. LAUB, of the Danish Flying Corps, recently broke the distance record for Denmark on a 90 h.p. Curtiss machine by making a continuous flight of 435 miles.

WONDER how many times round Denmark he had to fly?

AND whether it made him giddy?

### TEN YEARS AGO.

Excerpts from the *Auto*. ("FLIGHT's" precursor and sister journal) of September 1st, 1906. "FLIGHT" was founded in 1908:—

THE LONG-EXPECTED ANNOUNCEMENT.

It is announced from Spitzbergen, by way of Christiania, that owing to the lateness of the season Mr. Wellman has abandoned his plan of reaching the North Pole by airship.

SIR HIRAM MAXIM AND THE CONQUEST OF AIR.

Sir Hiram Maxim, it would appear, has become a convert to flapping flight as the best method of solving the aerial problem. His views on the subject of the superiority of flapping flight are summarised in the following observations:—

"With regard to the aeroplane, I am not at all wedded to that system, although I have carried out numerous experiments with it. I have studied the question for a great number of years with the assistance of one of the greatest mathematicians in the world, and I am now inclined to the belief that there is another and a better way. I have lately been studying the movements of the wings of large birds, and I find that these may be closely imitated, and that without any levers, cams, connecting-rods or articulated joints. In short, I have discovered a means of performing the functions of wings in a very simple and direct manner."

THE SANTOS DUMONT EXPERIMENTS.

Valuable information in regard to the Santos Dumont experiments has been supplied by Capt. Ferber, the well-known expert in such matters. As coming from him, the remarks carry special weight, and give a more encouraging view of the possible outcome of M. Santos Dumont's new departure than many people previously have been disposed to form. So far the aeroplane has only run on the ground on its wheels, but it is stated to be extremely controllable, and that with the 24 h.p. Levavasseur motor with which it is at present fitted, and with which on its bicycle wheels it attains a velocity over the ground of 25 kiloms. per hour, a very considerable lift is obtained.

AN AEROPLANE CONTROLLED BY WIRELESS TELEGRAPHY.

Prof. Graham Bell's aeroplane, which apparently does not carry an operator, but is controlled by wireless telegraphy from the ground, has recently, it is cabled, gone through a satisfactory test in America. It is stated to have risen to a height of 200 ft. from the ground, turning a complete circle, and alighted within a few feet of the starting point.

headed his machine for the raider, and flying at a terrific speed, it appeared that he was going to charge the monster. I shall never forget the sight of the blazing airship as it fell. Away up above the clouds, 12,000 ft. from the earth, the scene was terrifying in its grandeur. A huge sheet of flame cast a brilliant red glow over the black sky above, tinting to a vivid pink the clouds beneath.

"As the Zeppelin took fire a second airship was seen approaching, and this now occupied our attention. The commander of that craft, however, seeing the fate of the first Zeppelin, evidently considered that discretion was the better part of valour, for he turned tail and scurried off as fast as his engines would enable him to travel. At such a height and in the darkness it was impossible to pick him up.

He had a good start, and made the most of it. I am told that German aeroplanes accompanied the Zeppelins, but of this all I can say is I saw none on Sunday morning, although other officers claim to have done so."

# *Personals*

*Under the above heading will be published weekly particulars of a personal character relating to those who have fallen or have been wounded in the country's service, announcements of marriage and other items concerning members of the Flying Services and others well known in the world of aviation. We shall be pleased to receive for publication properly authenticated particulars suitable for this column.*

## **Casualties.**

Flight-Commander CHARLES E. ROBINSON, R.N. (previously reported missing, now reported killed), was born in November, 1886, and entered the Royal Marines in September, 1904. He had promotion in July, 1905, and was appointed Captain in September, 1915, while his rank as Flight-Commander in the R.N.A.S. was dated February, 1915.

Lieutenant ROBERT BURLEIGH, R.E., attached R.F.C., son of the late Mr. Bennet Burleigh, the war correspondent, has been killed in action. His brother, Lieutenant Bennet Burleigh, of the Lancashire Fusiliers, died in July, 1915, of wounds received in Gallipoli. Two other brothers are still on active service. A brother officer, writing to Mrs. Bennet Burleigh, says: "Robert and I flew together until a few days ago, when he was given a different observer. I have done many hours in the air with him. Day after day we carried on our work, and I never saw him anything but cheerful. One day not long ago he fought single-handed six Huns when over on photography, and although his plane was badly hit, he landed perfectly. Robert was a true Britisher through and through. He accomplished feats in the air which Huns cannot understand possible, deeds which have given us command of the air. I have seen his grave, and when on leave I will give you one of my maps with the position marked." Lieutenant Robert Burleigh was educated at the City and Guilds Technical College, West Kensington, where he gained a number of scholarships and received his diploma for engineering.

Major FRANCIS FITZGERALD WALDRON, Hussars and R.F.C., (previously reported missing on July 3rd, now stated to have fallen in action on that day), was 29 years of age, and only son of Brigadier-General Waldron. Born in August, 1886, he entered the cavalry in May, 1907, received promotion in May, 1910, and in January, 1913, was appointed to the R.F.C., in which he became an Instructor at the Central School in October, 1914. At mid-summer in that year he was promoted to Captain's rank in the cavalry. Major Waldron had served with great distinction in the war, and was mentioned in the early Despatches from Viscount French. He held the height record for the Army for several months, and was the first to reach Montrose in the first flight of Army aeroplanes to Scotland in 1913. He became squadron-commander in May, 1915.

Second Lieutenant DONALD CLARKE, R.F.C., who was killed on August 26th, was the eldest son of Mr. Arthur J. Clarke, Town Clerk of High Wycombe. Mr. Clarke, who was 21 years old, was educated at Seaford College, near Bexhill, Mill Hill and St. John's College, Cambridge. He enlisted in August, 1914, and served for over a year in the trenches with the H.A.C. He received a commission in the R.F.C. last May, and was an observation officer.

Lieutenant JAMES ROBERT DENNISTOUN, Irish Horse, attached R.F.C., died at Ohrdruf, in Thuringia, Central Germany, on August 9th from the effects of wounds received while flying. His biplane caught fire and he had to descend in the enemy's lines. He was the elder son of George James Dennistoun, of Peel Forest, Canterbury, New Zealand, a member of a younger branch of the old family of Dennistoun, of Dennistoun and Colgrain. He was born at Peel Forest, was educated at Wanganui and Malvern College, and was a Justice of the Peace for New Zealand. Lieutenant Dennistoun was a member of Captain Scott's Antarctic Expedition, 1910-11, and was awarded the King's Antarctic Medal and that of the Royal Geographical Society. After leaving school he had taken up sheep farming, but he took the keenest pleasure in mountaineering. He made the ascent of many of the snow-capped Southern Alps in New Zealand, amongst them that of several virgin peaks. He also climbed,

alone, Mitre Peak, in Milford Sound, which had up to that time been considered inaccessible. Lieutenant Dennistoun, who did a considerable amount of exploration work, was a member of the Alpine Club. On the outbreak of war he returned to England and obtained a commission in the Irish Horse. He went to the Front last November, and was for some months intelligence officer to a Division, afterwards joining the R.F.C. His brother, Lieutenant-Commander George Dennistoun, D.S.O., R.N., is on active service abroad.

## **Wounded.**

Second Lieutenant GEOFFREY RICHARD BOLITHO, Devonshire Regiment, attached R.F.C., who is reported wounded, is a son of the late Captain E. A. Bolitho, R.N., Rockbeare House, near Exeter, and was born in 1893. He joined the regiment mentioned as a Second Lieutenant as soon as the war broke out.

## **Married and to be Married.**

The engagement is announced between Flight Lieutenant F. M. L. BARR, R.N., eldest son of Engineer-Commander E. Barr, R.N., and Mrs. E. BARR, of Mossgeil, Rainham, Kent, and Ruby, only daughter of DARTFORD HOLMES, of Huddersfield, and grand-daughter of the late H. J. CHAPMAN, The Firs, Westgate-on-Sea.

An engagement is announced between Lieutenant GEOFFREY R. BROMET, R.N. (Squadron-Commander, R.N.A.S.), eldest son of Mr. and Mrs. George A. Bromet, of Tadcaster, Yorkshire, and MARGARET, eldest daughter of Major R. RATLIFF, Worcestershire Regiment, and Mrs. RATLIFF, of Lillington, Leamington Spa.

Captain ARTHUR TRAVERS HARRIS, Flight-Commander in the R.F.C., was married at St. Augustine's Church, Queen's Gate, on the 30th ult., to BARBARA KYRLE, only daughter of Major E. W. MONEY, formerly of the King's Shropshire Light Infantry, and of Mrs. MONEY, of Seaforth, Bexhill.

The engagement is announced between Captain O. E. S. MOSLEY-LEIGH, R.F.C., only son of Colonel Mosley-Leigh, of Belmont Hall, Northwich, Cheshire, and MARY ELEANOR OLIVE, elder daughter of C. L. STIRLING-COOKSON, of Houndwood and Renton, Berwickshire.

The marriage arranged between Mr. CUTHBERT ORDE, R.F.C., and LADY EILEEN WELLESLEY will take place at St. Bartholomew-the-Great, Smithfield, on September 11th, at 2 o'clock.

## **Items.**

From Second Lieutenant S. HOWARD ELLIS, R.F.C., comes an interesting letter, via his cousin. At present Mr. Ellis is a prisoner of war at Stammlager Wahn. In this letter the Hun, to his prisoner, is not painted as black as one finds his character depicted from other prison centres. May be Mr. Ellis has felt that he should be more or less diplomatic in his communications in order that he may get his news through to home. At least his story in a measure corroborates the opinion that with the *personnel* of the Flying Corps of the opposing countries there is a much kindlier feeling of *camaraderie* from all sections of the army than with the rest of the units. The letter runs thus:—

"I wonder if you have heard about me yet? I hope so. In case not I will tell you at length all about my little self. I was brought down by Archie (the anti-aircraft gun, you know) at 7.30 a.m. on July 3rd. I had just finished a rather tricky job most successfully. My flight was almost identical in its incidents with my first flight on July 1st, but I had flown lower and been more successful. I was feeling rather bucked with life. I had to cross the lines on return at 2,000 ft. Unluckily Archie was very accurate, and one shrapnel shell burst mighty close. A piece got my left leg just below the knee and broke the bone, putting the leg out of action.



Another bit pierced my neck to the throat and caused blood to flow a bit. I did not look to see how much the machine was hit. It knocked me out for a moment. When I recovered a bit I found the machine had dropped to 1,000 ft., and was in a devil of a spin owing to my left leg being off the rudder. I was on the German side of the lines. I tried to recover control and direct the 'bus to our side; tried to get my right leg round the joystick (control lever, i.e.); but it was no go. I still lost height and was feeling very groggy. Archie was pelting at me cheerily. As I neared the ground I had sense enough to switch off (to prevent fire), and the machine, by good luck, landed in a decent field and turned up on its nose, but not right over. It was pretty well crashed. Luckily I was strapped in. A number of Germans soon came up; they lifted me carefully out. As long as I live I will bless them for their gentleness, for I really felt a bit seedy then. A Red Cross doctor gave first aid, &c., and after some time I was removed by motor ambulance to a field hospital. Those fellows in the field were decent to me. . . . I was lucky in my field hospital. . . . For the first day or so I could not

swallow, and was rather a crock, but each day I got a bit better. After five days my old leg was laid to rest in plaster-of-Paris. . . . I was ten days in the field hospital and was sorry to leave all my friends there—they were such topping good fellows, they spoiled me. . . . I came here by motor ambulance on the 13th. This is a large hospital, very well fitted up and well run. It was thought that X-rays and an operation on my neck were necessary to remove the shrapnel. But in the middle of that night I was coughing like the deuce (ever since the 3rd, I had coughed a great deal), and out came a tidy piece of shrapnel. Great joy! No operation now necessary. . . . I am in a ward by myself, being, I think, the only officer here, but I am never lonely. A quite delightful young pilot of the German Flying Corps spent most of yesterday with me. He speaks English well, and is most interesting. He is coming again. I may be here a week or more, then move on to a hospital further back.

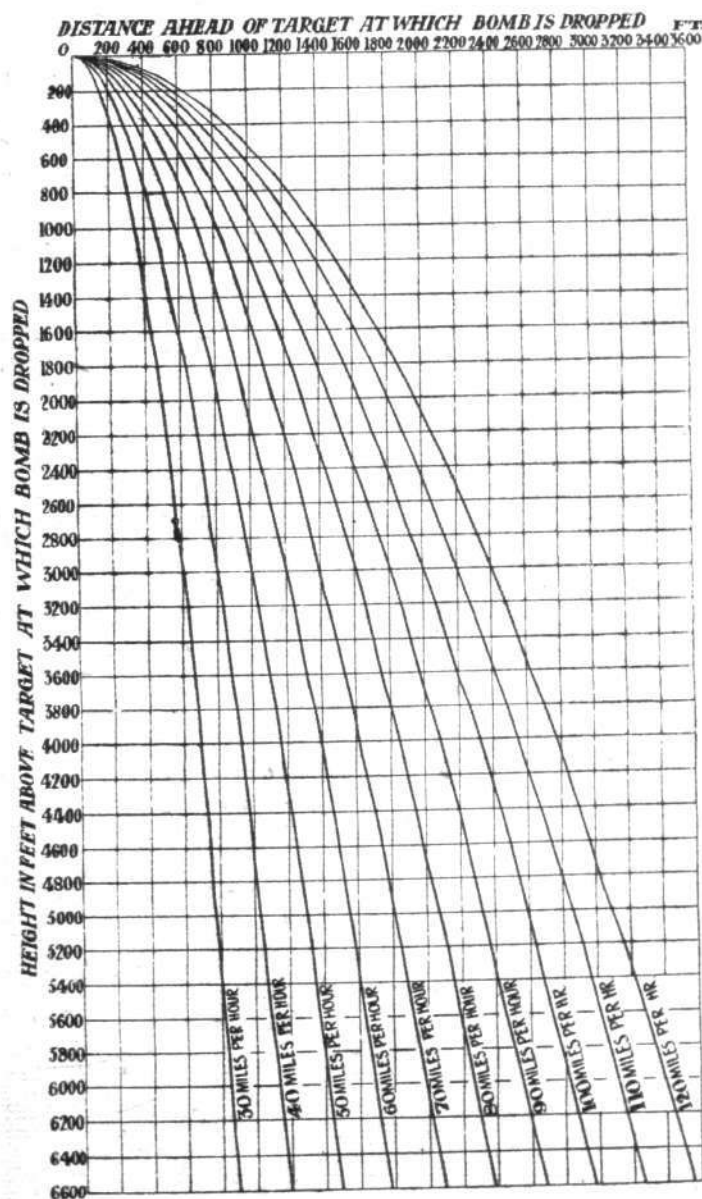
"I am allowed to write two letters and four postcards a month (can receive as many as I like)."



## ANSWERS TO CORRESPONDENTS.

If in doubt about anything aviatric, write to "FLIGHT" about it. W. T. P. (Eastleigh).

The accompanying graph, reproduced from our issue of December 18th, 1914, will, we think, give you the information you require. It represents the trajectories of a falling body



discharged from an aeroplane travelling at speeds varying from 30 to 120 m.p.h., neglecting air resistance. The path a bomb would follow would differ somewhat, owing to the

resistance of the air, and would be influenced by the shape of the bomb. In the case you mention you will see that if the bomb were released immediately over the object it would strike the ground 1,900 ft. beyond the object.

V. B. (West Hartlepool).

1. Rudder bars are now frequently made with a recess for the pilot's feet in order to prevent slipping off. Also, in many cases, the control wires running from the foot bar to the rudder crank lever are attached to the bar on the outside of the pilot's feet, so that the wires themselves prevent the foot from slipping.

2. It would be quite possible for a machine to fly with perfectly flat planes, but the area would have to be much greater than in the case of a cambered plane, as the flat plane is not nearly so efficient as the cambered wing.

3. The copies of "FLIGHT" containing the reports of the cross-Channel flight and of the first Rheims meeting are obtainable from the publishers, the first being No. 31, Vol. I, the other two being Nos. 35 and 36, Vol. I.

A. S. (Margate).

The world's aviation altitude records up to June 30th, 1914, are:—Aviator only: 6,120 metres, Legagneux (French). Aviator and one passenger: 6,170 metres, Bier (Austrian). Aviator and two passengers: 5,440 metres, Bier (Austrian). Aviator and three passengers: 4,770 metres, Loessl (Austrian). Aviator and four passengers: 3,050 metres, Garaix (French). Aviator and five passengers: 2,230 metres, Garaix (French). Aviator and six passengers: 1,750 metres, Garaix (French). Aviator and seven passengers: 1,600 metres, Garaix (French). Aviator and eight passengers: 1,530 metres, Garaix (French). Aviator and nine passengers: 1,590 metres, Garaix (French). Aviator and 15 passengers: 300 metres, Sikorsky (Russian).

Before the outbreak of war, but not in time to be homologated by the Fédération Aéronautique Internationale, the German pilot, Oelerich, attained a height of 8,150 metres; and other altitude records, notably with several passengers, have been beaten in this country during the war. Of these, however, nothing must be said at present.

R. W. P. (South Farnborough).

Thanks for letter of congratulation. We are glad to hear that our readers like the "Column."

F. U. (S. Farnborough).

Your first question, regarding the variation in density with altitude, has already been dealt with in our last issue. Other things being equal the thrust of any propeller is in direct proportion to the density of the air. The thrust obtainable with a given motor is found by the formula  $T = \frac{550 H E p}{v}$

where  $T$  = thrust delivered at propeller, in pounds,  $H$  = brake horse-power of engine,  $E p$  = efficiency of propeller, expressed as a decimal,  $v$  = velocity of machine, in feet per second. A fair average for propeller efficiency is 0.75. Thus, for a 50 h.p. engine, assuming a propeller efficiency of 75 per cent., and at a translational speed of 100 ft. per sec., or nearly

70 m.p.h., the thrust would be  $T = \frac{550 \times 50 \times 0.75}{100} = 206.25$  lbs.

# AIRCRAFT WORK AT THE FRONT.

## OFFICIAL INFORMATION.

### British.

*General Headquarters (France), August 29th, 9.45 p.m.*

"Yesterday in some aeroplane encounters four of the enemy's machines were accounted for, two being destroyed and two badly damaged. Two of ours are missing."

*War Office, August 30th.*

"*Salonica*.—On the 29th our aeroplanes bombed Drama Station and troops and transport at Porna, with apparently successful results."

*General Headquarters, September 1st, 10.49 p.m.*

"There was great aerial activity yesterday and many combats with the enemy, in which five of his machines were destroyed and at least seven others driven down much damaged. We undertook several bombing expeditions, which were successful. Five of our aeroplanes were lost."

*War Office, September 1st.*

"*Mesopotamia*.—With the exception of two successful bombing raids carried out by our aeroplanes against the Turkish positions on the Tigris front, there are no fresh developments to report."

*War Office, September 2nd.*

"*Egypt*.—Hostile aeroplanes bombed Port Said in the early hours of September 1st. In all 25 bombs were dropped, causing some casualties. No damage is reported."

"*Salonica*.—Our aeroplanes bombed Angista Station."

*War Office, September 4th.*

"*Egypt*.—An enemy aeroplane dropped three bombs on Rabah (about four miles east of Katia) on the morning of September 3rd. We suffered some casualties, but no damage is reported."

*General Headquarters, September 4th, 12.30 a.m.*

"Our aircraft did most useful work in co-operating with the artillery and infantry."

"The enemy's aeroplanes, which made desperate attempts to interfere, were successfully engaged in many aerial fights, and driven off with the loss of three machines destroyed and at least four others damaged, while we lost three."

### French.

*Paris, August 29th. Evening.*

"*Salonica*.—Lively artillery activity is reported in the region of Lake Doiran and on the banks of the Vardar, where we destroyed an aviation park at Maizenchi (west of Lake Doiran)."

*Paris, August 30th. Afternoon.*

"A German aeroplane was brought down in a fight by one of our pilots. The enemy machine came crashing to the ground near Fresnes, in the Woevre."

*Paris, September 1st. Afternoon.*

"In spite of the mist and clouds which prevailed over the greater part of the front, our flying services were particularly active. On the Somme front four German machines were brought down; one which was fired on with a machine gun at very close quarters by Warrant Officer Dorme came crashing to the ground near Manancourt. This is the eighth enemy machine brought down up to the present by this pilot. The three other machines were brought down south and south-east of Peronne. Two other machines were seen to fall damaged in the same region."

"In Champagne an Aviatik, which was seriously hit in an air-fight, fell inside the German lines north of Somme-Py. Another enemy machine which was hit by our special guns was forced to land north-east of Somme-Suippes. The two aviators were made prisoners."

"Finally, near Biquebourg (Oise) a German machine having landed in our lines owing to engine trouble, the passengers were taken prisoners."

*Paris, September 1st. Evening.*

"Three German aeroplanes were brought down this afternoon by our special anti-aircraft guns. Two of them fell on the right bank of the Oise, and the third near Douaumont. About 3 o'clock this afternoon an enemy aeroplane dropped two bombs on Giromagny. The material damage done was insignificant. One man was wounded."

*Paris, September 3rd. Afternoon.*

"One of our airmen brought down a German aeroplane, which fell close to Dieppe (north-east of Verdun). On the Somme front four more German aeroplanes were badly hit

in encounters, and descended abruptly in their own lines. Our bombarding air squadrons carried out numerous operations yesterday with excellent results. Our squadrons twice visited the railway station of Metz-Sablons, and threw altogether 86 120 mm. bombs on the buildings and railway tracks."

"The damage observed was considerable. Sixty 120 mm. bombs were also dropped on the military establishments north of Metz. Our aeroplanes bombarded the stations of Maizières-Metz, Conflans, Sedan and Audun-le-Roman, as well as the cantonments and depôts at Ham, Nesle, Guiscard, Athis and Monchy-Lagache. In all 210 bombs were dropped on these places. Numerous bursts on the targets and outbreaks of fire in many places were observed."

### Russian.

*Petrograd, August 30th. Afternoon.*

"In the region north of Dvinsk in the course of an air battle one of our machines brought down a German Fokker, which fell in the enemy's lines."

*Petrograd, August 31st.*

"In the direction of Kowel, in the region of the village of Velitsk, two enemy aeroplanes attacked one of our machines, which was brought down and fell in our lines. The gallant aviators, Second Lieut. Tikhomiroff and the observer, Lieut. Danilevitch, were killed."

*Petrograd, September 1st.*

"South of Lake Wygonowskoie, on the Oginski Canal, our artillery brought down an enemy aeroplane, which, after it had come to earth in the enemy's lines, caught ablaze and was burnt."

"In the Volhynia region, during the course of the fight, enemy aeroplanes made uninterrupted reconnaissances. Our aviator, Ensign Filippov, with an observer, Sub-Lieutenant Khrizoskoley, attacked an enemy machine, which, having side-slipped, turned nose downwards and fell steeply to earth."

### Italian.

*Rome, August 29th.*

"An enemy aeroplane dropped bombs and arrows on the Cortina D'Ampezzo Basin, but without causing damage."

*Rome, August 30th.*

"Enemy aeroplanes dropped bombs on Alleghe and on the Lagoon at Maravo, wounding a few persons and causing some slight damage."

*Rome, August 31st.*

"Hostile aircraft dropped numerous bombs on the lagoon at Marano, killing one woman, wounding a few civilians, and causing slight damage."

*Rome, September 1st.*

"Enemy aircraft dropped bombs on Proveni and Lapai without doing any damage."

*Rome, September 2nd.*

"Hostile aircraft dropped bombs on Rolle Pass, at the head of the Cismon Valley (Brenta) and the Agordo Basin (Cordevole Valley). No damage was done."

*Rome, September 3rd.*

"A hostile aeroplane dropped bombs on Ansonzo, in the Anzei Valley, without causing any damage or casualties."

### Roumanian.

*Bucharest, August 30th.*

"Last night a Zeppelin and a foreign aeroplane dropped several bombs on Bucharest, without causing the least damage. Artillery drove them off."

"Enemy aeroplanes dropped bombs on Baltchik and on Piatra and Neamt, without doing any damage."

*Bucharest, September 3rd.*

"Three hostile seaplanes dropped bombs on Constanza (on the coast). Several children and civilians were wounded."

### German.

*Berlin, August 29th.*

"Three enemy aeroplanes were shot down in air fights, one south of Arras and two at Bapaume. A fourth machine fell into our hands undamaged east of St. Quentin."

*Berlin, August 30th.*

"North of the River Ancre and west of Muelhausen two enemy aeroplanes were put out of action in an air fight. Two aeroplanes were brought down by anti-aircraft fire north of the Somme, and another machine was forced to land within our lines near Sovecourt."

*Berlin, August 31st.*

"In the course of an attack on military works at Lutzk and Torczyn our airmen shot down three enemy aeroplanes



Another enemy machine was put *hors de combat* on Tuesday at Listopady, on the Beresina."

*Berlin, September 1st.*

"In the Somme sector we shot down in air fighting six enemy aeroplanes and on the Meuse one enemy aeroplane. Another fell down east of Ypres under our anti-aircraft fire."

### British Air Work.

THE following *résumé* of incidents, extracted from recent reports of the Royal Flying Corps in France, has been received from the Air Board:—

"Bombing raids as follows were carried out on the night of July 31st to August 1st: 32 heavy bombs were dropped on the dump at Corons; the railway track, a bridge over the road, and some of the station buildings were hit. Thirty heavy bombs were dropped on the hostile aerodrome at Queant; one shed was set on fire and another damaged; the railway station adjoining the aerodrome was also hit. The aerodrome at Ancoisne was attacked and two sheds hit.

"A further attack by 16 of our machines was made on the station sidings and dumps at Ledeghem; much damage was caused and three fires started; in the course of this raid one of our escorting machines brought down a Fokker, which was seen to fall to earth in a field south of Poelcappelle.

"A bombing raid by nine of our machines was carried out on the Zeppelin sheds at Brussels on August 2nd. No direct hits were observed on the sheds, though heavy bombs were seen to explode very close to them. Anti-aircraft gunfire was opened on our machines, which had descended to 1,000 ft. to drop their bombs, but it was inaccurate. One hostile machine was seen, but it did not attack. All our machines met at their appointed rallying place after the raid, and all returned in safety, having picked up an escorting patrol on their return journey. The whole raid took five hours.

"Another raid, composed of 13 machines, was organised against Courtrai Station with a view to assisting the return of the Brussels raiders. Direct hits are reported to have been obtained as follows: Three on rolling-stock, two on buildings adjoining station, four on the railway yard and one on the main line. All machines returned safely. The anti-aircraft fire was very heavy during the attack, and a considerable number of hostile aircraft were engaged by the escort.

"In the forenoon of August 3rd eight of our bombing machines, accompanied by an escort, left to attack the Ronet sidings at Namur and the airship sheds at Cognelée. Five of the machines reached their objective, and considerable damage in both cases was caused. A good deal of anti-aircraft fire was encountered when attacking the airship sheds.

"A patrol machine sighted a hostile machine over Ypres, and in a 10 minutes' fight fired 12½ drums of ammunition. The hostile aeroplane, driven down from 11,000 to 5,000 ft., plunged to earth.

"Four of our fighter aeroplanes encountered seven hostile machines on August 3rd near Flers. In the fight which ensued, and which lasted for 45 minutes, six of the enemy machines were driven down, and the seventh broke off the fight.

"One of our Nieuport aeroplanes on patrol on August 8th, at 17,000 ft., observed an Albatros circling between Armentières and Lille. The pilot waited until the hostile machine had made two circuits, and then dived and attacked it from

### Turkish.

*Constantinople, August 30th.*

"On August 27th hostile airmen unsuccessfully dropped bombs upon some parts of the coast region."

### Bulgarian.

*Sofia, Aug. 31st.*

"An air squadron attacked the bridges near Buk Railway Station. No damage was done, nor were any lives lost."

behind and below. A long shaft of flame burst from the hostile machine, and our aeroplane had to turn quickly to avoid the flame, the heat of which was felt by the pilot. The hostile machine fell and hit the ground near Frelinghien, one of the occupants having already fallen out.

"One of our fighter machines engaged four hostile aeroplanes over Bapaume. Attacking one from underneath, our pilot forced it down in a nose dive, and it was seen to fall to earth east of Bapaume by independent witnesses. The British machine, though badly damaged, managed to regain our lines in safety. Later, another pilot attacked single-handed three L.V.G.'s, which were attempting to cross our lines, and turned them all back.

"Seven of our machines carried out a successful bombing raid on the railway and factories at Blanc Misseron, east of Valenciennes, on August 12th."

The following account of an encounter in the air on August 2nd was received from a pilot recently wounded:—

"After dropping bombs on Marcoing (south-west of Cambrai) I turned round and almost ran into an L.V.G. I fired a drum at him and he passed underneath me. I saw one of our machines engage him, and, while changing drums, I was attacked in front by a Roland. I fired a drum at this machine, and, hearing a machine gun behind me, looked round and saw three Rolands on my tail. I was hit in the leg almost immediately, but managed to give the hostile machines a drum from my side gun, on which they went away. My engine started spluttering, and I saw a hole in my petrol tank. My engine then stopped, and I then started gliding down, thinking I should have to land. The petrol was flowing over my left leg, but I managed to put my left knee over the hole in the petrol tank. It occurred to me that by pumping I might be able to get a little pressure. When I was only 200 ft. up my engine started. I was then about 15 miles from my lines. I kept pumping hard, and just managed to keep enough engine to keep going, though I thought I should have to land three or four times. Once I had actually flattened out to land when the engine picked up just in time, and I managed to cover the 15 miles to the lines at an average height of only 50 ft. I had lost myself, and was so low that I could see very little of the country. So, seeing a French biplane flying low, I followed it and eventually landed, crashing the machine in doing so. I was feeling very weak, as I had lost a lot of blood, and was exhausted by having to pump for so long. During the time I was flying so low I was subjected to a lot of rifle and machine gun fire."

### R.N.A.S. Raid on Hoboken and Ghisteltes.

THE Admiralty issued the following announcement on September 4th:—

"On the afternoon of the 2nd inst. the shipbuilding yards of Hoboken, near Antwerp, were successfully bombarded by naval aeroplanes.

"On the 3rd inst. the enemy aerodrome at Ghisteltes was also bombarded with effect by a large squadron of our machines.

"All machines returned safely in both cases."

### From Other Sources.

Messages received in Paris from Salonica on August 18th state:—

"Some enemy airmen attempted a bombardment of our positions at Ostiovo, but fled before our artillery fire."

Mr. W. Beach Thomas, "with the British Army in the Field," writing to the *Daily Mail* on August 17th, says:—

"The Germans are good enough to say that the offensive is over. That is why, perhaps, they continue to move up new batteries and are urging their aircraft to braver flight.

"To-day our anti-aircraft guns shot down two enemy planes in the neighbourhood of Ovivlers, of which one lay flaming close to our lines; and the episode is a sign of the times. I doubt whether our 'Archies,' whose later powers is much under-rated, have ever had more victims or so successfully driven the enemy to extreme heights.

"The sudden deluges of rain which have fallen to-day have vitally altered the fighting, both in the air and on the ground.

The aeroplanes have been driven down, and many of the shell-holes to which the enemy has been driven for refuge by the shelling of their trenches are become ponds or bogs. Did ever the rainbow, that symbol of protective goodness, ever bridge a grimmer battlefield? I see it as I write, resting as it seems to the right on Guillemont, to the left on Pozières."

The *Times* correspondent with the Serbian Army, on August 18th, writes:—

"In the course of the day 19 Serbian aeroplanes visited Monastir and dropped some 90 bombs on the Bulgarian aerodrome in that town with excellent effect.

"In the morning a flotilla of enemy aeroplanes flew over Vertekop, near Vodena, bombing the British ambulances attached to the Serbian Army, and wounding six persons."

The *Daily Telegraph's* correspondent in Paris, writing on August 20th, says:—

"Second Lieut. Guynemer brought down his thirteenth

enemy aeroplane on Thursday and his fourteenth on Friday. He is just 20, and was unknown as an aviator before the war. He soon, however, so to speak, won his spurs, was promoted Sergt., then Second Lieutenant, and won successively the Military Medal, the Legion of Honour, and the Military Cross. He was once slightly wounded, but that incapacitated him only for a few weeks.

"The honours list of French aviators whose names have so far been revealed by General Headquarters are Second Lieuts. Guynemer, 14 enemy aeroplanes; Navarre, 12; Nungesser, 10 and 2 'sausages'; Chainat, 8 and 1 'sausage'; Chaput, 8; Lenoir, 7; Haurtaux, 5; and Sergt. de Rotheftort, 5.

"Second Lieut. Haurtaux has just been named for the first time. He belongs to the flight squadron called the 'Storks,' which Capt. B. commands, and which boasts a total bag of 40 enemy aeroplanes, viz., Capt. B., 4; Lieut. D. and Sergt.-Major G., 4 each; Lieut. de L., 3; Second Lieut. Chainat, 8; and Haurtaux, 5, the remainder of a total bag of 40 secured by men in the squadron who have since lost their lives."

Mr. W. Beach Thomas, writing to the *Daily Mail* on August 20th, states:—

"Another incident that put the men in high fettle was the fall of a German aeroplane. Apparently the pilot, who circled round courageously enough, wished to pick up the signals sent by our advancing troops in the wood, and, perhaps, attempted to send false signals to our guns. But he flew just too low. As he crossed the line one half round of shots from a Lewis gun finished his course. A little flash of fire was seen on the plane. It shook, appeared to make a back somersault, then tilted as violently forward, crumpled up and crashed on to the German line in High Wood. It is a curious coincidence that the troops in this attack have seen three similar instances, one each time they have gone over the parapet."

The *Times* correspondent at Salonica on August 20th writes:—

"British seaplanes yesterday bombarded with success a column of the enemy marching east of Kavala."

The Russian correspondent of the *Petit Parisien*, after a visit to the fighting line, says:—

"That the Germans are evidently uneasy is proved by the activity of their aircraft, which are dropping bombs on the railroad every day.

"A Russian flying captain on a Nieuport pursuing machine has in three days brought down three enemy aircraft behind the lines of Baranovitch."

Mr. Philip Gibbs, the *Daily Telegraph* correspondent with the British Armies in the Field, writing on August 23rd, says:—

"Acting in combination with our aviators, who are always observing from high places, our gunners are punishing the enemy in a very frightful way, and the ground above Thiepval and Courcelette, into which I looked for the first time at close range from the switch trench, and Martinpuich, and the barren ground to the right of it, is swept by our shell fire . . .

"From another man, in the 3rd Battalion of the 124th Regiment, there is a letter which pays a doleful tribute to our flying men:—

"I am on sentry duty, and it is a very hard job, for I dare not move. Overhead are the English airmen and in front of us the English observers with telescopes, and as soon as they perceive anything 24 'cigars' arrive at once, and larger than one cares to see—you understand what I mean. The country round me looks frightful."

Mr. Beach Thomas, in a message to the *Daily Mail* on the same date, writes:—

"In watching the British attack up the hill towards Thiepval, and among trenches as tangled as the pattern of a quick hedge in winter, I saw, but nearly missed, a spectacular detail full both of beauty and meaning. Lifting my eyes a moment from the battle among the ditches, I caught sight of one of our aeroplanes. It served as a pointer to another and then another until the sky seemed full of them, all quite inaudible through the noise of the guns. Some were high, some comparatively low. No German gun could shoot without drawing their eagle eye to it, and no German plane come near to return the compliment, to spy upon our fire. I believe our artillery hit over a score of enemy emplacements this day; but I know that not from the information of my eyes.

"What happened in the air above me was this. These circling eagles of ours saw one German plane, greatly daring, though skied inconceivably high, making towards our line. In a moment their dilettante circling ceased, and the flock steered a straight course for the enemy. 'Up and at 'em' is at least as true of the British airman as of the British soldier. 'Down and away' was the only possible answer of the German; and he took his only alternative with admirable celerity.

"Our airmen always thus gather to a battle. They have strange experiences. Again and again as when the storm breaks they see the thunderbolt. Our great howitzer shells at the top of their flight are perfectly visible, and even give the impression of not travelling at any inordinate speed. As the war goes on many airmen find that they see a score of things previously invisible. They know what to look for; and perhaps they become attuned to what they work in, gaining a technical as well as a spacious vision. How much their universal presence, their eyes as well as their missiles, have affected the enemy's emotions we know from many letters and other evidence.

"So even in a close and local attack on trenches the airmen play their part and make beneficent journeys over the infantry, but one hardly heeds them."

The *Times* correspondent with the Serbian Army, writing from Salonica on August 21st, notes:—

"An enemy aeroplane was brought down by a Serbian pilot on the Moglena front, the machine falling behind the enemy's lines."

The *Times* correspondent at the British Headquarters, writing on August 21st, said:—

"Up to the very limits the weather makes possible, our airmen continue their gallant and successful work. Most eloquent on this subject is an extract from a letter written by and captured on a prisoner:—

"Each of us crouches in a little hole that he has dug out for himself as a protection against possible splinters, and stares at nothing but the sky and the black wall of the trench, . . . and the airmen circle over us and try to do some damage, but only enemy ones, for a German airman will not dare to come here—far too much afraid—only behind the front a great crowd, and here not one makes an appearance."

"Another prisoner, a well-educated man, discussed our air supremacy freely, maintaining that it was not owing to any inferiority in the German machines or men, but only to the great extent of front which they had to cover, both in the East and West, while machines had also to be sent to the Balkans and to assist the Turks.

"Eloquent, again, is one of our own reports upon the subject: 'Fifteen indecisive combats took place, but the hostile machines for the most part descended as soon as engaged.' And this experience occurs again and again. The German tactics, indeed, are very different from the days in which they used to sail in the upper air, to wait for our men and attack them from above as they came over. Now the enemy, still keeping well on his side of the lines, tries to do what observation he does from low altitudes from which he can quickly get down to the ground.

"As for the fruits of the bravery of our men, they are simply incalculable. There is never a day of good visibility, when, helped by aeroplane observation, our guns do not make a greater or smaller number of direct hits on enemy batteries and destroy and blow up ammunition pits. Again and again, also, the air observation has guided them to break up counter-attacks which might otherwise have been serious and to find and scatter columns of men or transport on the road.

"In addition to all this is the immense damage which the airmen themselves do with their bombs to points behind the line far into enemy territory. Railway lines, railheads and stations, aerodromes, depôts, factories engaged in war manufactures, and all similar points which have a direct military use, are our chief objectives. The testimony of many prisoners agrees as to the enormous demoralisation caused by these attacks and the great hindrance to the enemy's troop movements and concentrations of material behind his lines. When this war is over historians will have no more interesting theme than the share which our aviators bore in the winning of it.



Mr. G. Ward Price, writing to the *Daily Telegraph* from Salonica on August 22nd, says:—

"Our seaplanes have played a certain part in hindering the Bulgarian advance. They bombed a marching column of the enemy near Kavala, and blew up a pontoon bridge at Kutchuk-Osmanli, over the Mesta River."

Lieut. Rene Puaux, in an article on the military situation, says:—

"It is evident that the Anglo-French aviation service will not permit German trains to come and go with that regularity which is indispensable in order to allow evacuations, not only of the troops, but also of the enormous material accumulated in the last two years."

The *Daily Telegraph* correspondent with the British Armies in the Field, in a message dated Saturday, writes in regard to the attack on Thiepval at the end of last week:—

"It is obvious that the German Headquarters Staff realises the gravity of the position. . . . Fresh troops or old troops are food for our guns, greedy for them. It is only by guns that the enemy can fight against guns, and he is drifting down batteries into a great concentration for the defence of Thiepval. . . . Meanwhile, we have in this sector, beyond any shadow of doubt or exaggeration, the mastery of the air, and that is of supreme advantage to our gunners, and to the infantry who are supported by them."

The *Morning Post* correspondent with the British Army,

writing on August 25th with regard to the attacks on Thiepval, states:—

"All the time the guns kept up their terrific din. The Germans lost no time in putting up a barrage on our front line trenches and in other places. It is one of their disadvantages that they have no aerial observation to speak of and must be mainly dependent on what their infantry observers tell them. On the other hand, I witnessed the heroic spectacle of half-a-dozen of our own aeroplane observers wheeling and circling all over and round the battlefield, so that they could constantly send back news to our artillery. From time to time they flew very low, and the little smoke clouds from German anti-aircraft guns burst all round them; but not one was brought to the ground."

Mr. G. Ward Price, writing from Salonica to the *Daily Telegraph* on August 28th regarding the bombardment of the Kavala forts, says that an aeroplane controlled the fire of the ships. He goes on:—

"The enemy's reply to the bombardment was to send three aeroplanes over Kavala Harbour, where the three monitors were lying, also a number of Greek ships, which had been permitted to enter the port, bringing food for the inhabitants of the town. The aeroplanes dropped five bombs, which fell in the water, and two others, of which one dropped in the garden of a notorious local pro-German, while the second did not explode."

## FROM THE BRITISH FLYING GROUNDS.

### Grahame-White School, Hendon.

STRAIGHTS with instructors last week: Messrs. Culver, Meering, Saunders, Styles and Zambournis. Circuits with instructors: Messrs. Edwards and Lyles. Eights with instructors: Messrs. Cockell, Fisher, Jamie, Keymer, Mills, Shadwell and Soden. Eights alone: Mr. Ormerod.

Brevets taken during week by Messrs. Duncan, Kay and Ward.

Instructors: Messrs. Manton, Winter, Pashley, Biard and Hale.

### Beatty School, Hendon.

The following pupils were out during last week: Mrs. Wilkinson, Messrs. Owen, Hathaway, Bruce, Stewardson, Birks, Bradley, Cowan, Wood, de Wilde, Gadsden, Bailey, Webb, Richards, Goodman, D. C. Squires and Allen.

The instructors were Messrs. G. W. Beatty, G. Virgilio, L. L. King, A. E. Mitchell and H. Fawcett; the machines in use being Beatty-Wright dual-control and single-seater propeller biplanes, and Caudron dual-control and single-seater tractor biplanes.

Mr. B. J. E. Curry took his certificate on August 30th on a Caudron machine.

### London and Provincial School, Hendon.

PUPILS doing straights last week: Messrs. Quayle, Egerton, Lewis, Davy and Sellars. Doing circuits and eights: Messrs. Sellars, Birkin and Dunnett.

Instructors: Messrs. W. T. Warren, M. G. Smiles, W. T. Warren, Jun., and P. G. Allen.

Royal Aero Club certificate taken by Mr. L. E. Dunnett.

### Bournemouth School.

PUPILS rolling alone last week: Messrs. Ross, Wingfield, Montgomery, Holland, Constant, Davies and Burry. Doing straights alone: Messrs. Adamson, Brandon, J. B. Smith and Wilmott. Half circuits alone: Messrs. Hammersley, Hinchliff and Fenn. Figures of eight or circuits alone: Messrs. Daniel, Pritt and H. Smith.

Instructors: Messrs. S. Summerfield and E. Brynildsen.

35.45 and 60 h.p. Caudrons in use.

### A Denial from Berlin.

A CONTRADICTION, only semi-official by the way, has been sent out from Berlin to the statement recently made by Major Baird that 35 Zeppelins had been destroyed by the Allies. The message adds that Germany has only lost about a fourth of that number.

### For Machine Tools.

MAKERS of machine tools are giving more and more attention to the requirements of the aircraft industry. In this connection it may be noted that Messrs. Henry J. Brewster and Co., of 11, Queen Victoria Street, E.C., among other tools; are producing a surface grinding machine which well merits investigation by aircraft works managers. The working surface is 18 by 6 ins. by 9½ ins. high, while the table over all is 46 by 6 ins. It is fitted with automatic longitudinal and traverse movement, with automatic stop for throwing out feed to any desired point. An important consideration is that the firm can give prompt delivery.

### The Young Stamping Machine.

WITH regard to this useful device for stamping test marks, &c., on small parts and fittings, we understand that the makers, the Blackburn Motor and Aeroplane Co., have granted the selling agency to the Aircraft Supplies Co., 17, John Street, Theobald's Road, London, W.C.

### Alexander Developments.

THE G. H. Alexander Engineering Co., Ltd., who are

successors to Mr. George H. Alexander, of Coleshill Street, Birmingham, the well-known maker of Alexander automatic machine tools, will shortly be installed in their extensive new works at Oldbury

### "Croid" Liquid Glue.

NOTHING succeeds like success, and it is gratifying to hear that the demand for "Croid" liquid glue continues to grow. Although this glue has made its name chiefly in connection with the building up of propellers, there are infinite uses to which it can be put, and the makers, the Improved Liquid Glues Co., Ltd., Great Hermitage Street, E., supply it in various grades to suit different requirements.

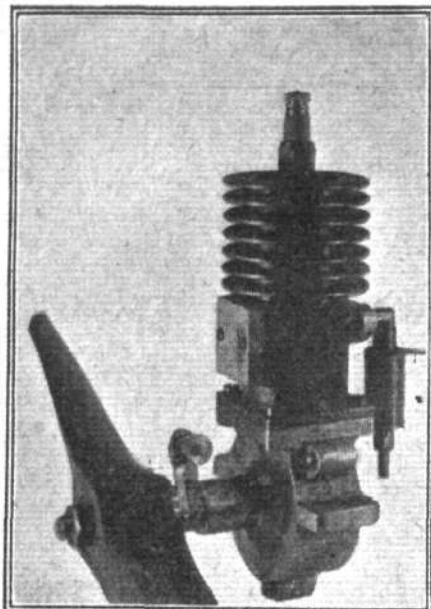
### For Small Fittings.

ALTHOUGH during the past few months the aircraft industry has expanded enormously, there is still plenty of room for enterprising newcomers. In this connection, the latest addition is, however, not exactly a newcomer, for Mr. William Moss, who, having severed his connection with Messrs. Whiteman and Ross, is starting business on his own account, has been specialising in "bits and pieces" for the past eight years or so. At his new headquarters, 52, High Street, New Oxford Street, W.C., facing Tottenham Court Road, Mr. William Moss will specialise in small fittings, such as wire, copper ferrules, strainers, eyebolts, washers, thimbles, &c. He knows his business and the requirements of the industry, and he has selected a very accessible centre for attracting custom.

## A PETROL ENGINE FOR MODELS.

THERE is little doubt that there is a great deal to be learnt from large-sized scale model aeroplanes. The question of the power plant, however, unfortunately presents a serious obstruction to experiments of this kind. Rubber motors are, of course, out of the question when one is dealing with large-sized models, not only on account of the excessive weight for

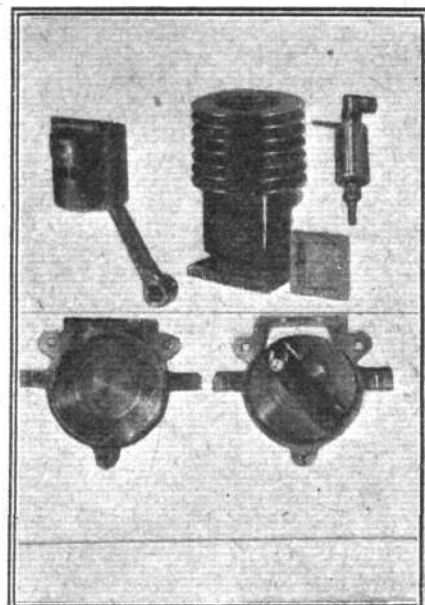
quite a lot of power. When we had it under test it ran at 1,800 r.p.m. for periods of about 5 to 7 minutes—as long a duration as would ever be required for model aeroplane experiments. At the end of each run the engine was not unduly hot. The weight of the engine, with carburettor, sparking plug, and propeller is 1 lb. 15 oz.



The Sharp two-stroke petrol engine for model aeroplanes.



Sketch showing the component parts of the carburettor on the Sharp petrol engine for model aeroplanes.



The component parts of the Sharp two-stroke petrol engine for model aeroplanes.

power given, but owing to the space required for the length of the rubber strands it is not possible to adhere sufficiently to the conditions obtaining in the full-sized machine. Steam, CO<sub>2</sub>, and compressed air plants have been used with more success, but even here departures from actual practice arise. With the small petrol engine, however, one approaches nearer the "real thing," but obstacles present themselves in the way of the successful running of the engine.

Taking it on the whole these small petrol engines have not proved very reliable, and the power given for the weight has been rather disappointing. One of the latest model engines to be turned out which we have had the opportunity of inspecting and testing, however, gives promise of success. This little engine, which is shown in the accompanying illustrations, has been put on the market by Messrs. A. W. Gamage, Ltd., of Holborn, London, E.C., and has been designed and built by Mr. F. N. Sharp, who has done much experimenting with model engines. It is a single-cylinder two-stroke engine having a bore and stroke of 1 1/8 ins. The usual two-cycle principle is employed, viz.:—the mixture is drawn into the crankcase on the up-stroke of the piston, compressed on the down-stroke and admitted to the cylinder through ports which are uncovered by the piston at the bottom of its stroke. The exhaust gases escape through ports in the cylinder wall directly opposite the inlet ports. The cylinder is cast iron, cast in one piece with large sized cooling fins, and the sparking plug is located in the head. Cast iron is also used for the piston, which has two compression rings, and a baffle plate on the top to deflect the incoming mixture upwards and prevent it from going straight across to and out through the exhaust ports. The connecting rod, which is gun-metal, is mounted in the piston by means of a fork, carrying the wrist pin, which is screwed into the piston head. The crankshaft is of the single bearing type, balanced, and the aluminium crankcase is vertically divided. The make-and-break for the ignition is mounted on the propeller, timing being effected by adjusting the position of the contact blade, which is held by a sleeve mounted on the end of the crankshaft. Petrol flows by gravity to the very simple carburettor shown in the accompanying sketch. Lubrication is also a simple matter. A little oil is put into the crankcase now and again, and as soon as the motor is started a little oil may be squirted through the air intake of the carburettor. This little engine runs very smoothly and regularly, and appears to develop

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